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THE LANCET.

No. 4264. Vol. CLXVIII. LONDON, SATURDAY, MAY 20, 1905. [Pp. 120+56.

CONTENTS.

AN ADDRESS on the Financial Relations between the London Hospitals and their Affiliated Medical Schools: and the Bearing of these Relations on Medical Education. Being the Annual Oration of the Medical Society of London, delivered on May 15th, 1905, by HENRY MORRIS, M.A. Lond., F.R.C.S.Eng., Senior Surgeon to the Middlesex Hospital; Member of the General Medical Council, &c. 1313

THE LUMLEIAN LECTURES on Nutrition and Malnutrition. Delivered before the Royal College of Physicians of London on March 28th and 30th and April 4th, 1905, by W. H. ALLCHIN, M.D. Lond., F.R.S.Edin., Fellow and Censor of the College; Senior Physician to the Westminster Hospital. — Lecture III. 1319

ORIGINAL ARTICLES.

General Cystic Disease of the Kidneys in Brother and Sister: Nephrectomy. By EDGAR L. COLLIS, B.A., M.B. Oxon., M.R.C.S. Eng., Honorary Surgeon to the Corbett Hospital, Stourbridge; and JOHN T. HEWETSON, M. D. Edin., M. Ch. Birm., F.R.C.S. Eng., Surgical Curator at the Pathological Museum, Birmingham 1326

Two Cases of Gangrene with Spontaneous Amputation. By E. OWEN THURSTON, M.B., B.S. Lond., F.R.C.S. Eng., Captain, I.M.S.; Resident Surgeon, Medical College Hospital, Calcutta. — (*Illustrated*) 1331

Epidemic Cerebro - spinal Meningitis and Posterior Basic Meningitis. By O. HILDESHEIM, M. D. Oxon., late House Physician to the Hospital for Sick Children, Great Ormond-street 1332

A Second Case of Pneumococcus Endocarditis Treated by Anti - pneumococcus Serum. By T. J. HORDER, M.D., M.R.C.P. Lond., Physician to Out-patients, Great Northern Central Hospital; and H. C. L. SCOFIELD, M.B., C.M. Edin. 1333

Congenital Elevation of the Scapula. By CHARLES R. KEYSER, F.R.C.S.Eng., Assistant Surgeon to the Cancer Hospital, London ... 1333

Is Man Poltophagic or Promophagic? By HUBERT HIGGINS, M. A. Cantab., M. R. C. S. Eng., L. R. C. P. Lond., late Demonstrator of Anatomy to the University of Cambridge and Assistant Surgeon to Addenbrooke's Hospital, Cambridge.—(*Illustrated*) 1334

The Influence of Small-pox on Vaccination. By J. COOTE HIBBERT, M. D. Lond., D.P.H., Assistant Medical Officer of Health, Newcastle-upon-Tyne 1337

A Note upon the Neilson System of Sewage Purification. By H. LAING GORDON, M.D. Edin. 1373

A MIRROR OF HOSPITAL PRACTICE.

LIVERPOOL INFIRMARY FOR CHILDREN:
A Case of Multiple Fractures in an Infant. (Under the care of Mr. R. C. Dun) 1338

MEDICAL SOCIETIES.

CLINICAL SOCIETY:
Fatal Case of Typhoid Fever with Lobar Pneumonia due to the Bacillus Typhosus.—The Operative Treatment of Fracture of the Astragalus ... 1338

EDINBURGH MEDICO-CHIRURGICAL SOCIETY:
Word Blindness.—Treatment of Disease by Intravenous Injections 1340

EPIDEMIOLOGICAL SOCIETY:
The Spread of Small-pox around Small-pox Hospitals in Relation to Aerial Convection 1341

BRITISH GYNÆCOLOGICAL SOCIETY:
Transfusion, Subcutaneous and Intravenous, in Gynæcological Practice 1342

BRIGHTON & SUSSEX MEDICO-CHIRURGICAL SOCIETY:
Appendicitis 1342

SOUTH-WEST LONDON MEDICAL SOCIETY:
The Pathology and Treatment of Cancer of the Breast 1342

LEEDS & WEST RIDING MEDICO-CHIRURGICAL SOCIETY:
Exhibition of Cases and Specimens 1343

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY:
Exhibition of Specimens 1343

BRISTOL MEDICO - CHIRURGICAL SOCIETY:
Exhibition of Cases 1343

LARYNGOLOGICAL SOCIETY:
Exhibition of Cases 1343

REVIEWS AND NOTICES OF BOOKS.

A Student's Text-book of Zoology. By Adam Sedgwick, M.A., F.R.S. 1343

Malignant Disease of the Larynx. By Philip R. W. de Santi, F.R.C.S.Eng. 1344

An Introduction to Physiology. By L. A. Hodgkinson Lack, M.B., Ch.B.Edin. 1344

The Surgery of the Head. By Bayard Holmes, B.S., M.D... 1345

A Monograph of the Anopheles Mosquitoes of India. By S. P. James, M. B. Lond., Captain I.M.S., and W. Glen Liston, M.D.Glasg., Captain I.M.S. 1345

A Woman's Words to Women on the Care of their Health, and The Mother's Guide to the Health and Care of her Children. By Mary Scharlieb, M.D., M.S.Lond. 1345

Contribution à l'Etude de l'Intoxication d'Origine Ophidienne. By Dr. Vital Brazil.. 1345

Dental Surgery for Medical Practitioners and Students of Medicine. By A. W. Barrett. Fourth Edition ... 1345

The Horse: Its Care and Management. By Henry E. Fawcus 1345

An Introduction to Pharmacognosy. By Smith Ely Jelliffe, M.D., Ph.D. 1346

Alcoholic Poisoning and Degeneration. By Professor G. Bunge, M.D., Ph.D. 1346

The Book of the Potato. Edited by T. W. Sanders, F.L.S., F.R.H.S. 1346

The Practitioner 1346

Journal of Comparative Pathology and Therapeutics 1346

Journal of Experimental Medicine 1346

Veterinary Journal 1347

Journal of Pathology and Bacteriology 1347

Journal of the Scottish Meteorological Society 1347

Birmingham Medical Review.. 1347

Dublin Journal of Medical Science 1347

West London Medical Journal 1348

REPORTS AND ANALYTICAL RECORDS FROM THE LANCET LABORATORY.

(1) "Wellcome" Brand Chloroform; and (2) Borofax 1348

Vinolia White Coal Tar Soap... 1348

Infants' Food 1348

Chinosol Compressed Tablets... 1348

Diastase Setterie 1348

Vichy Water and other Mineral Waters 1348

Toffee 1348

Cheltenham Natural Aperient Water 1349

Gold Reef Clotted Cream 1349

Three Star Swiss Dry Milk..... 1349

LEADING ARTICLES.

THE FINANCIAL RELATIONS OF THE LONDON HOSPITALS AND THEIR MEDICAL SCHOOLS ... 1362

THE RELATION OF MILK DEPÔTS TO THE PUBLIC HEALTH 1363

THE PATHOLOGY OF EPILEPSY 1364

SOME CONSIDERATIONS CONNECTED WITH THE RELATIVE IMMUNITY OF THE JAPANESE ARMIES FROM TYPHOID FEVER 1365

ANNOTATIONS.

The Influence of Tradition on Medical Practice 1366

Hospitals and the Well-to-do... 1366

Sir Ernest Cassel's Gift for the Relief of Ophthalmia in Egypt 1367

The Physiological Action of Valerian Juice 1367

The New Sydenham Society ... 1367

Alien and Immigrant London in 1781 1368

Instructions to Midwives 1368

Peritonitis in Typhoid Fever without Perforation 1368

Plague and Rats 1369

New Lying-in Hospital at Woolwich and the Higher Training of Midwives 1369

Aneurysm of the Aorta simulating Pott's Disease 1370

The Queen's Jubilee Hospital.. 1370

The Action of a New Colloidal Ferric Hydrate (Dialysed Iron) on Albumin 1370

The Medical School of Westminster Hospital 1371

The Annual Dinner of the Pharmaceutical Society 1371

Gastritis with Erosions, or "Erosive Gastritis" 1371

Conversazione of the Medical Society of London 1372

Brompton Hospital Lectures... 1372

The Nature of the Silver Reaction in Animal and Vegetable Tissues 1372

Royal Institute of Public Health 1373

VISIT OF BRITISH PHYSICIANS AND SURGEONS TO PARIS.—(*Illustrated*) 1349-61

MEDICINE: ITS PRACTICE AND ITS PUBLIC RELATIONS.
Chapter XII.

The Poor-law and Medical Service.—(*Continued*) 1375

LOOKING BACK.
(From THE LANCET, Saturday, May 19, 1827) 1378

VITAL STATISTICS:
Health of English Towns ... 1379
Health of Scotch Towns 1379
Health of Dublin 1379

SPECIAL ARTICLES.

Royal Medical and Chirurgical Society: The Centenary Programme 1374

Royal College of Surgeons of England 1377

Asylum Reports 1377

The Royal Society Conversazione 1378

The Services 1380

Birmingham 1382

Liverpool 1383

Wales and Western Counties Notes 1383

Scotland 1384

Ireland 1385

Paris 1385

Berlin 1386

Vienna 1387

New York 1387

Notes from India 1388

Australia 1388

CORRESPONDENCE.

Sir Thomas Browne Memorial Statue (Sir Peter Eade and others) 1381

The Aerial Convection of Small-pox (Dr. Claude B. Ker) 138

The Prophylactic Injection of Diphtheria Antitoxin (Dr. P. J. Cammidge) 1381

Tetanus and Chloral Hydrate (Dr. J. M. Fortescue-Brickdale) 1382

Medical Evidence at Coroners' Inquests 1395

Compulsory School Attendance and Public Health (Mr. Rowland Hunt) 1396

A Large Infant (Dr. Wm. P. Johnstone) 1396

MEDICAL NEWS.

North-Eastern Hospital for Children, London 1319

Pass-list of the University of Cambridge 1389

University of London 1390

University of Oxford 1390

Higher Education of Nurses ... 1390

Royal Sanitary Institute 1391

Country Schooling for Town Children 1391

PARLIAMENTARY INTELLIGENCE.

Notes on Current Topics 1391

House of Lords 1391

House of Commons 1392

Registration of Nurses 1392

Books, &c., received 1394

Appointments.—Vacancies 1394

Births, Marriages, and Deaths. 1395

Notes, Short Comments, and Answers to Correspondents... 1395

Medical Diary 1396

FOR INDEX TO ADVERTISEMENTS SEE PAGES 2 & 4.

INDEX.

MEDICAL AND OTHER BOOKS AND PUBLICATIONS.

COVER.

ADLARD & SON:—
Shaw..... Essays on Insanity 1

ARNOLD:—
Hutchison .. Diseases of Children.... 1

BAILLIERE, TINDALL & COX:—
Autobiography of *Dr. J. Gant* 1
Bourne & Stevenson.. Squint Occurring in Children 1
Clarke ..... Refraction of the Eye .. 1
Beales ..... Hernia..... 1
" ..... Thoroughed Tombs 1
Jellett ..... Midwifery 1
Lake ..... Diseases of the Ear 1
Macnaughton-Jones..... Diseases of Women 1
Monro ..... Manual of Medicine.... 1

BALE, SONS & DANIELSSON:—
Worth ..... Squint..... 1

GLAISHER:—
Dowse ..... X-Rays 1
Herschell .. Constipation..... 1
Wright..... Treatment of Hæmorrhoids, &c. 1

KIMPTON, H.:—
Books Wanted and for Sale 1

LAMONT, CORLISS & CO.:—
Marchand .. Therapeutical Applications of Hydrozone .. 1

LEWIS:—
Campbell, H. Flushing, &c. 1
" Headache 1
" The Rest Cure 1
Roth ..... Curvature of the Spine 1

MEDICAL PUBLISHING CO.:—
Lane ..... Chronic Constipation .. 1

PENTLAND, Y. J.:—
Berry..... Manual of Practical Ophthalmology 1
Waring .... Operative Surgery 1

SAUNDERS & CO.:—
Saunders' Medical Hand-Atlases..... 1

MEDICAL LIBRARIES, &c.:—
Catalogue of the Institute of Hygiene 1
Davisson—Sight-Testing for the G.P. 1

BAILLIERE, TINDALL & COX:— PAGE
Hay ..... Constipation 10
Lake ..... Laryngeal Phthisis 10

BALE, SONS & DANIELSSON:—
Moullin .... Inflammation of the Appendix 8
" .... Ulcer of the Stomach .. 8
Worth ..... Squint..... 8

CASSELL & CO.:—
Bland-Sutton Tumours 9
Bousquet .. Serums, Vaccines, and Toxines 9
Bruce ..... Materia Medica, &c.... 9
Burton-Fanning .. Pulmonary Tuberculosis 9
Gould ..... Surgical Diagnosis 9
Herman ..... Diseases of Women 9
" .... First Lines in Midwifery 9
" .... Difficult Labour..... 9
Hutchison & Rainy .. Clinical Methods 9
Manson, Sir P. Tropical Diseases 9
Morris, H. .. Surgical Diseases of the Kidney and Ureter 9
Morris, M. .. Diseases of the Skin 9
Savage..... Insanity, &c..... 9
Treves, Sir F. Operative Surgery 9
" Surgical Operations 9
" Surgical Anatomy..... 9
" Intestinal Obstruction.. 9
" System of Surgery..... 9
Whitelegge.. Hygiene &c..... 9
Yeo ..... Mineral Springs, &c. 9
" ..... Food in Health, &c. 9
" ..... Medical Treatment 9

CHURCHILL, J. & A.:—
Cripps ..... Ovariotomy, &c. 10
Harrison .... Stone, Prostate, &c. 10
Squire's Pharmacopœias of the London Hospitals..... 10

GREEN & SONS (EDIN.):—
Hall & Hewlett.. Manual of Morbid Histology, &c. 10

GRIFFIN & CO.:—
Macleod .... Examinations in Public Health 12

KEGAN PAUL & CO.:—
Taylor ..... Diseases of the Eye 11

LEWIS:— PAGE
Penwick .... Diseases of the Stomach 3
Lewers ..... Diseases of Women 3
" ..... Cancer of the Uterus 3
Moullin .... Enlargement of the Prostate 9
" .... Inflammation of the Bladder 8
New Sydenham Society:—
Atlas of Clinical Medicine, &c. 3
Oliver ..... Blood & Blood-pressure 3
Pyrwell, Sir R. D..... Treatment of Diseases, &c., of the Heart..... 3
Shuttleworth Mentally-deficient Children 3
Suckling .... On Periodical Headache or Migraine 3
" .... On Epilepsy 3
" .... On Movable Kidney 3
" .... Treatment of Diseases of the Nervous System .. 3
" .... Diseases of the Brain and Spinal Cord 3
Weekes .... On Deafness, &c. 3

LONGMANS, GREEN & CO.:—
Dakin ..... Handbook of Midwifery 6
Dickinson .. Renal and Urinary Affections 6
Gray ..... Anatomy 6
Halliburton.. Chemical Physiology .. 6
Schäfer..... Essentials of Histology 6
Text-book of Medical Practice..... 6

MACMILLAN & CO.:—
Lockwood .. The Surgery of Appendicitis 10

PENTLAND, Y. J.:—
Lockwood .. Aseptic Surgery..... 10
" .. Cure of Hernia, &c. 10

PRACTITIONER, Ltd.:—
Clarke ..... Dislocation of the Hip... 11

REBMAN:—
Dreyer ..... Appendicitis 9
Health and Disease in Relation to Marriage 9

RENSHAW:—
Wood ..... Application of Trusses 11

SAUNDERS & CO.:— PAGE
Brühl & Politzer .. Otology 5
Dürck ..... General Pathologic Histology 5
" ..... Special Pathologic Histology 5
Grünwald .. Mouth, Pharynx, and Nose 5
" .. Larynx 5
Haab ..... Operative Ophthalmology 5
" .... Ophthalmoscopy 5
Helferich.... Fractures and Dislocations 5
Jakob ..... Internal Medicine & Diagnosis..... 5
Lohmann & Neumann.. Bacteriology 5
Mracek..... Syphilis & Venereal Diseases 5
Nothnagel's Practice..... 10
Schäffer .... Gynæcology 5
" .... Obstetric Diagnosis & Treatment 5
" .... Operative Gynæcology 5
" .... Labour & Operative Obstetrics 5
Sultan ..... Abdominal Hernias 5
Zuckerkandl. Operative Surgery..... 5

SMITH, ELDER & CO.:—
Kastley .... Orthopædic Surgery... 10
" .... Gastric Ulcers..... 10
" .... Complicated Wounds 10
Lawson .... Diseases and Injuries of the Eye 8
Tirard ..... Albuminuria, &c. 8

SPRAGUE & CO.:—
Brist..... Orthopædic Apparatus Guide..... 12

WILLIAMS & NORGATE:—
Bergonzini, Bruns & Mariani .. Practical Surgery 7
Dutton, Todd & Christy.. Trypanosomiasis Expedition to the Congo .. 7
Stephens & Christophers Practical Study of Malaria 7
Thompson Yates Laboratories Reports 7

MEDICAL LIBRARIES, &c.:—
Books—Stammering 10

OFFICIAL AND GENERAL ANNOUNCEMENTS.

APPOINTMENTS VACANT:—
Bethlem Hospital 77
Birkenhead Borough Hospital 76
Borough of Harrogate 77
Cancer Hospital, Fulham-road..... 76
Central London Ophthalmic Hospital 76
Chester General Infirmary 77
Furneval County Asylum, Bodmin.... 76
Coventry and Warwickshire Hos. .. 77
David Lewis Northern Hospital, Liverpool 77
East London Hos. for Children, &c. 76
Evelina Hospital for Sick Children .. 76
Guest Hospital, Dudley 77
Huddersfield Infirmary 77
Metropolitan Asylum B. ard Hospitals 77
Metropolitan Hospital, Kings and-rd. 76
Mill-road Infirmary, Liverpool 77
New Hospital for Women, Euston-road 76
North-Eastern Hospital for Children, Hackney-road 76, 77
Nottingham General Hospital 77
Royal Air Hospital, Soho 77
Royal Westminster Ophthalmic Hos. 76
Salisbury Infirmary 76
Sanatorium for Poorer Consumptives, Winley 77
Sidlaw Sanatorium, Auchterhouse.... 76
Society of Apothecaries of London .. 77
Tottenham Hospital, London 77
Western General Dispensary, Marylebone-road 76
West London Hospital 77

ASSISTANCIES, MEDICAL 84

ASYLUMS, HOMES, &c.:—
Ashwood House, Kingswinford 75
Barkham House, Lambeth 75
Barrwood House Hospital..... 64
Bishopstone House, Bedford 67
Bodorgan Manor, Bournemouth 74
Buntingford House Retreat, Herts .. 70
Camberwell Apothecaries' Asylum .. 75
Clarence Lodge, Clapham-park 75
Coppice, The, Nottingham..... 68
Coronation Home, Hove 76
Cotswold Sanatorium 70
Crookabury Sanatorium, Surrey..... 74
Dalrymple House, Rickmansworth .. 74
Dartmoor Sanatorium 71
David Lewis Colony, Alderley Edge.. 75
Denton Jones' Sanatorium, Parkstone 71
Dorchester Asylum 67
Dr. Eastbourne 74
Dr. Rashleigh's Sanatorium, Dartmoor 73
Dr., Gharlbrook 76
Dunstone Park Sanatorium, Paignton 74
East Anglian Sanatorium, Nayland .. 72

ASYLUMS—(Continued). PAGE
Enclosfield, Ashford 74
Edwards Harrogate 76
Fairbred Retreat, Gloucestershire.... 67
Ferguson, Barnet 74
Fleetwood-Taylor, Lancaster-gate.... 67
Flower House, Catford 67
Grove House, Church Stretton 68
Grove, The, Catton, Norwich 68
Hailey Open Air Sanatorium, Ipsden 73
Haydock Lodge, Newton-le-Willows 69
Health Resort Enquiry Office, Strand 74
High Shot House, Twickenham 75
Hitch, Mrs., Hollington 68
Home for Invalid Children, Coldash 75
Home Sanatorium, Bournemouth 71
Inverciath Lodge Retreat, Collingburgh 69
Kingstown House, Box 67
Lady Superintendent, Brighton 74
Lady Superintendent, Streatham 74
Lawson, Nondrach-on-Dee, Banchory 71
Leech, Clapham-park 75
London Fever Hospital 74
London Open-Air Sanatorium, Wokingham 73
M. D. Leadenhall-street 75
Melbourne House, Leicester 68
Meadie Hills Sanatorium, Wells 71
Mont House, Tamworth 68
Neuville, Surgeon-hill..... 75
New Premier Sanatorium for Consumption, Delamere Forest 73
Nordrach in Wales 70
Nordrach-upon-Mendip Sanatorium... 70
Northlands Retreat, Wandsworth 75
Northumberland House, Finsbury-park 70
Northwoods House, Winterbourne .. 69
Norwood Sanatorium 74
No. 807, L.C., Strand..... 75
No. 847, L.C., Strand..... 75
Ochil Hills Sanatorium, Kinross-shire 72
Overdale, Whitefield..... 68
Palmerston Sanatorium..... 71
Plas-yn-Dinas, Merionethshire 70
Plympton House, South Devon 69
Rosrevor Open-Air Sanatorium, Warrenpoint 72
Shaftesbury House, Formby 69
Small-pox, &c., Hos., south Mimms .. 74
Springfield House Private Asylum, Bedford 67
St. Andrew's Hospital, Northampton 68
St. Luke's Hospital, E.C. 68
Stocker, Craven-street..... 74
Stone House, Canterbury 74
Stretton House, Church Stretton 68
Thundercliffe Grange, nr. Rotherham 76
Tower House, Leicester 68
Tuthill, Fakenham 75
Vale of Clwyd Sanatorium..... 76

ASYLUMS—(Continued). PAGE
Warneford Asylum, Oxford 67
West Malling-place, Kent 70
Wexford House, Exeter 68
Wye House, Boston 68
Wyke House, Isleworth 68
Yarrow Convalescent Home, Broadstairs..... 69

FINANCIAL, &c.:—
Birkbeck Bank..... 72
Equitable Reversionary Interest Soc. 72

HEALTH RESORTS, BATHS, &c.:—
Aberystwith, the Riarritz of Wales .. 72
Austrian Travel Bureau—
Tours in Austria 74
Bad Kissingen 72
Bad Nauheim 75
Felixstowe..... 73
Langenschwalbach..... 74
Matlock Bath 75
Moffatt Hydropathic 74
Smedley's, Matlock 74
Woodhall Spa Baths 73

HOTELS:—
Baron Court Hotel, New Milton 67
Dfracombe Hotel 67
Kissingen—Hotel de Russie 67
Montreux Hotels and Chateau, Belmont 67
Philps' Dunblane Hydro 67

HOUSE & ESTATE AGENTS .. 80, 83

LIFE & FIRE ASSURANCES:—
Prudential 79

MASSAGE:—
Jackson Palmer 69

MEDICAL ACCOUNTANTS, &c.:—
Turner 64

MEDICAL AGENTS:—
Dr. Field Hall 81
Lee & Martin 79
London Medical Agency 80
Manchester Medical Agency 80
Manchester Medical, &c., Association 79
Medical Agency 80
Moore 82
Needes, Herbert 82
Needes, J. C. 81
Ortidge 84
Peacock & Hadley 81
Portland House Medical Agency..... 82
Reynolds & Branson 82
Scholastic, Clerical, &c., Assoc. .. 78, 79
Southern Medical Agency 82
Turner 80
Wilson & Son 12

MEDICAL SCHOOLS (LONDON):—
Cooke's School of Anatomy 61
West London Post-Graduate College. 69

NURSING INSTITUTES:—
General Nursing Association 67
Hos. for Sick Children, Gt. Ormond-st. 66
Leeds Trained Nurses' Institution.... 61
London Nurses' Association 67
Male and Female Nurses' Assoc. 66
Male Nurses' Association 65
Male Nurses' Co-operation..... 66
Middlesex Hos. Trained Nurses' Inst. 67
Nurses' Co-operation, Portland-place 66
Queen Charlotte's Lying-in Hos..... 61
St. John's House 63
Temperance Male and Female Nurses' Co-operation 66
Temperance Male Nurses' Co-operation 66
York-road General Lying-in Hospital, Lambeth 66

OFFICIAL NOTICES:—
Central Midwives' Board..... 61
College of Hygiene, &c., Dunfermline 61
College of Preceptors..... 61
Durham University Med. Graduates' Association 61
Hospital for Diseases of the Throat 61
London Post-Graduate Association 63
London Throat Hospital..... 61
Mount Vernon Hos. for Consumption 66
Oxford University 63
Pathological Laboratories, Langham-place 61
Royal College of Physicians of London and the Royal College of Surgeons of England 63
Royal Naval Medical Examination .. 61
Surgical Aid Society 73
Trinity College, Dublin 64
University of London 65
Victoria University of Manchester .. 64

PARTNERSHIPS & PRACTICES 82

RAILWAYS, &c. 78, 79

SCHOOLS, PREPARATORY, &c.:—
Asher's English, &c., School Agency 84
Manchester Physical Training College 84
Ramsgate—Aberdeen House School 84
Swedish Clinique & School, Cromwell-road 84

TUTORS & LECTURERS:—
Duchesne..... 85 | No. 862, L.C. .. 61
Evans ..... 85 | Patterson 15
Fellowships .. 86 | Univ. Exam.
Gemmell ..... 85 | Postal 1905... 85
Gooch ..... 85 | Van Praagh.... 85
Kuris ..... 85 | Weymouth 84

(For Index to Trade and Miscellaneous Advertisements see page 4).

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INDEX—(CONTINUED).

TRADE AND MISCELLANEOUS ADVERTISEMENTS.

COVER.

PAGE

CHEMISTS & DRUGGISTS:—
Allcock & Co.—
Pepsina Fluvi ... 11
Acid Glycerine of Pepsine ... 11
Mallinson & Robbins—
Quinine-cocoa Pills ... 111

FOODS:—
Fry's Malted Cocoa ... iv
Valentine's Meat Juice Co.—
Meat Juice ... ii

WATCHMAKERS, &c.:—
Smith & Sons, Ltd.—
Doctor's Watch ... iii
Strand Half Chronometer ... iii

WINES, BEER, SPIRITS, &c.:—
Gaymer & Son—Cyder ... ii

AMBULANCES:—
St. John Ambulance—
Invalid Carriages ... 14

BICYCLES, &c.:—
Norton—Tricycles ... 14

BOTTLE MERCHANTS:—
Isaacs ... 13
Islington Glass Bottle Company ... 13
Kilner Brothers, Ltd. ... 13

CARRIAGES, MOTORS, &c.:—
Armstrong—
Coachman's and Grooms' Liveries 14
Dabuis—Victoria-Brougham ... 14
Hansbee, Ltd.—
Motor Cars ... 14
Imperial Accident, &c., Insurance Co. 14
Jay, George-street, Portman-square—
Secondhand Carriages ... 14

CHEMISTS & DRUGGISTS:—
Allen & Hanburys—
Castor Oil ... 37
Medical List ... 33
Pepsin Amara ... 34
Antitoxins ... 39
Amarcris Chemical Co.—
Amarcris Tablets ... 44
Brady & Martin—
Saline Infusion Apparatus ... 37
Brin's Oxygen Co.—Brin's Oxygen ... 30
Burbidges, Burbidges & Co.—
Dactol ... 30
Salocreol ... 30
Calodal ... 30
Burroughs, Wellcome & Co.—
Kepler Solution ... 40
Tabloid Trade Mark ... 28
" Nux Vomica Compound.. 39
Wellcome Serums ... 39
Chivers & Co.—
Glyco-Thymoline ... 28
Glyco-Heroin ... 26
Diuretin ... 27
Cramer & Son—
Nourry's Iodinated Wine ... 47
" Syrup ... 47
Cheelylate of Sodium (Ulis) ... 47
Lecithine (Ulis) ... 47

CHEMISTS—(Continued). PAGE
Cuxson, Gerrard & Co.—
Pills and Tablets ... 44
Gale & Co.—
Linetus Heroin Co. ... 38
Liq. Saponis Ætherei ... 38
Gilbert, Schacht & Co.—
Schacht's Fluid Pepsine ... 20
Hewlett & Son—
Mist. Pepsinæ Co. c. Bismuthe ... 41
Liq. Santal Flav. c. Buchu et Cubebe ... 41
Heyer & Co.—Hefo-Seifen ... 36
Kirby & Co.—
Glycocola ... 45
Kreochyle Co.—
Barff Boro-Glycerate ... 36
Malvine Manufacturing Co.—
Malvine with Cascara Sagrada ... 27
Parke, Davis & Co.—
Solution Adrenalin Chloride (Takamine) ... 32
Raimes & Co.—
Silinger's Nutrient Suppositories.. 36
Richards—Lactopeptine ... 25
Roberts & Co.—
Bromidia ... 37
Sanatogen Co.—Sanatogen ... 46
Savory & Moore—
Pancreatic Emulsion ... 29
Schimmel & Co.—Pollantia ... 36
Scott & Bowne—
Scott's Emulsion ... 48
Squire & Sons—
Perocal ... 31
Glycheeal ... 31
Tamar Indian Grillon ... 37
Trommer Preparations ... 48
Willows, Francis, Butler & Thompson—
Mist. Bismuthi Comp. ... 46
Mist. Cerii Comp. ... 46
Zimmermann, A. & M.—
Exodin ... 13
Sublamin ... 28
Glutol ... 28
Soma-Exodine-Lactate ... 28
Glycerophosphates ... 28

FOODS:—
Allen & Hanburys—
Allenbury's Milk Foods ... 35
" Malted Foods ... 35
Appleyards—Artox Wholemeal ... 41
Armour & Co.—
Glycerine Extract of Red Bone Marrow ... 43
Aylesbury Dairy Co.—
Humanised Milk ... 23
Benger's Food, Ltd.—
Peptonised Beef Jelly ... 24
Peptonised Chicken Jelly ... 24
Batchley's Diabetic Preparations ... 37
Bovril (Limited)—Invalid Bovril ... 21
Cadbury's Cocoa ... 42
Callard & Co.—
New Diabetic Foods ... 39
Coleman & Co.—
Wincarnis ... 42
Frame Food Co.—Frame Food ... 22
International Pharmco, Ltd.—
Plasmon ... 18
Manbu Food Co., Ltd.—
Manbu Diabetic Foods ... 39
Nicoll's & Co.—
Hæmatogen ... 19
Protene Foods ... 39
Roborat Co.—Roborat ... 39

FOODS—(Continued). PAGE
Tibbles' Vi-Cocoa, Ltd.—Vi-Cocoa ... 49
Van Abbott & Sons—
Foods for Diabetes and Obesity .. 39
Wellford & Sons—
Sanitary Milk Supply ... 18

FURNITURE, &c.:—
Army and Navy House Furnishing Co. 12
Carter—Invalid Furniture ... 5
Maple & Co.—Carpets ... 1

HOSIERS, &c.:—
Jay Finish Pants and Drawers ... 34

MED. & SURG. APPLIANCES:—
Bailey & Son—
Elastic Stockings ... 45
Abdominal Belts ... 50
Down Bros.—
The "First Aid" ... 17
Down Bros.' Lever Clamp Binaural Stethoscope ... 17
Skinner's Ghost Piece with Finger Rest ... 17
Indiarubber Cushions ... 17
Dowding Radiant Heat Co.—
Dowding Radiant Heat and Light Treatment ... 42
Galen Manufacturing Co.—
Milne's Waterproof Bandages ... 11
" Ribbon Gauze ... 11
" Gauze Pads ... 11
Hawkins—
Riva-Rocci Sphygmomanometer.. 15
Heal & Son—
Hospital Bedsteads and Aseptic Furniture ... 33
Holland—Instep Arch Seat ... 13
Hooper & Co.—
Elastic Water or Air Beds ... 35
Macfarlan & Co.—
Formalin Sterilised Catgut ... 42
Marconi's Wireless Telegraph Co.—
Induction Coils ... 18
May, Roberts & Co.—
Absorbent Tissue ... 28
Cotton Wools ... 28
Gamgee Tissue ... 28
Lints ... 28
Waterproof Sheetings ... 28
Millikin & Lawley—Osteology, &c. .. 13
Pessl—Arch Support Socks ... 14
Pope & Plante—
Elastic Stockings ... 12
Abdominal Supporting Belts ... 13
Robinson & Sons—Cam-gee Tissue ... 13
Sykes, Josephine & Co.—
Corsets and Belts ... 13
Watson & Sons—
High Tension Transformer ... 42

MINERAL WATERS:—
Æsculap Bitter Water Co.—Æsculap.. 31
Apollinaris Co.—Apenta ... 42
Carnwal, Ltd.—Carnwal ... 40
Contrexeville Pavilion ... 47
Davis—Turner's Water ... 16
Ellis & Son—Buthis Water ... 34
Hogg & Son—Lithia Waters ... 14
Ingram & Royle, Ltd.—
Vichy ... 37
Evian Source Cachat ... 37
Kissingen Mineral Waters ... 38
Salutaris Water Co.—
Salutaris Water ... 43

MINERAL WATERS—(Continued). PAGE
Villacabras ... 40
Voigt Bros. & Co.—
Wiesbaden Geon-Water ... 40

PHOTOGRAPHY:—
Martin—Developing Rollable Film .. 45

PRINTERS & ENGRAVERS:—
Cooke & Co.—
Brass Name Plates and Lamps 14

SANITARY APPLIANCES, &c.:—
British Lysoform Co., Ltd.—
Lysoform ... 45
Fennett & Johnson—
Bmol-Kalent ... 42
Fels-Naptha Soap ... 13, 50
Joyce' Sanitary Compounds Co.—
Cyllin ... 47
Newton, Chambers & Co.—Izal ... 31
Simon Bros.—
Hall's Distemper ... 32
Southall Bros. & Barclay—
Accouchement Sets ... 15
" Sheets, &c. ... 15

SURGICAL INSTRUMENTS, &c.:—
Evans & Wormull—
Prepuce Clamp Forceps ... 35

TAILORS, BOOTMAKERS, &c.:—
Dowie & Marshall—Boots ... 36
Emerson Boot Store—
Surgeon's Boot ... 13
Usher & Sons, Tailors ... 15

TYPEWRITING, &c.:—
Cambridge Typewriting Agency, Adelphi ... 11

VACCINE LYMPH:—
Allen & Hanburys—
Calf Lymph ... 12
Calf Vaccine Institution ... 12
Kime—Glycerinated Calf Vaccine ... 12
Jenner—Ingleby for Calf Lymph 12
Rebman—
Glycerinated Pure Calf Lymph .. 12
Renner's Calf Lymph Establishment.. 12
Wyleys, Ltd.—Calf Lymph ... 12

WINES, BEER, SPIRITS, &c.:—
Buck & Co.—
"G. B." Diabetic Whisky ... 39
Bowen & McKechnie—
Ferme-Parara Bitters ... 35
Glen Alva Whisky ... 30
Brown & Pank—
Fine Vintage Brandy ... 41
Pemberton's—
Commendador Port Wine ... 41
Quatter's Liqueur Brandy ... 39
Mackenzie & Co.—
Pure Highland Malt Whisky ... 41
Mackrill's Three Star Brandy ... 10
Simpson & Co.—Scotch Whisky ... 41
Tanqueray, Gordon & Co.—
Dry London Gin ... 49

MISCELLANEOUS:—
Stevenett—Hospital Carriage ... 45
Wright—Stereoscopical Coils ... 45

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An Address
ON
THE FINANCIAL RELATIONS BETWEEN THE LONDON HOSPITALS AND THEIR AFFILIATED MEDICAL SCHOOLS; AND THE BEARING OF THESE RELATIONS ON MEDICAL EDUCATION.

Being the Annual Oration of the Medical Society of London, delivered on May 15th, 1905,

By HENRY MORRIS, M.A. Lond., F.R.C.S. Eng.,
SENIOR SURGEON TO THE MIDDLESEX HOSPITAL; MEMBER OF THE GENERAL MEDICAL COUNCIL; MEMBER OF THE COUNCIL (LATE VICE-PRESIDENT AND CHAIRMAN OF THE COURT OF EXAMINERS) OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MR. PRESIDENT AND GENTLEMEN,—Until the last decade or so the medical schools in London were practically self-supporting. Year by year, however, the progress of medical sciences, the addition of fresh subjects of study, and the introduction of more exact methods of demonstration into medical teaching, have added to the expense of medical education. At length, despite the increasing personal self-sacrifices of the teachers, it was found that the schools were making annual deficits and that it was no longer possible for them to continue their work without assistance, in one form or another, from the funds of their respective hospitals. Two schemes were put forward for relieving the schools and the hospitals of this burdensome expenditure—one a self-supporting amalgamation scheme; the other the establishment, by an appeal to the public for funds, of an Institute of Medical Sciences in connexion with the University of London. Meanwhile questions were raised as to the justifiability of applying funds given to the hospitals to the purposes of the medical schools attached thereto.

When, in accepting the invitation of the council of the Medical Society to deliver the annual oration I proposed as my subject, "The Financial Relations between the London Hospitals and their Medical Schools," there had been, so far as I was aware, no rumour of the appointment by the President of King Edward's Hospital Fund for London of the "Medical Schools Committee." As this committee, consisting of Sir Edward Fry as chairman, Lord Welby, and the Bishop of Stepney, has made its report and as the information contained therein is far more complete than I could otherwise have obtained, I shall, in addressing you this evening, constantly allude to the report itself and to the evidence on which the report is based.

The terms of reference and instruction to the committee were the following:—

To consider and report—

1. Whether any, and if any how much, money given or subscribed for the relief of the sick poor to the 12 London hospitals having medical schools is contributed, directly or indirectly, by those hospitals, or any of them, for the maintenance of medical education.

2. Whether any direct or indirect return for such contributions (if any) is received by the hospitals from their medical schools, and, if so, whether such return is equivalent to the amount of the contributions.

3. Whether, in the event of the committee finding that any hospital contributes to its medical school a sum in excess of the return it receives from the medical school, there are any special considerations advanced in justification of such expenditure or any general considerations which would apply to all hospitals having medical schools.

It is an instruction to the committee to deal with the subject on the basis of existing arrangements and to accept from the hospitals as existing arrangements any such as they may advise the committee will be in operation on Jan. 1st, 1905.

The circumstances which led up to this inquiry were, no doubt, threefold: 1. The Antivivisection League for eight years had been protesting against the hospitals granting subsidies to their associated medical schools, solely and entirely on the ground that the practice of vivisection had been carried on in the medical education given in some of these schools. 2. Certain vague statements and arguments, founded on the increase in the population of London in receipt of hospital treatment, out of proportion to the increase in the whole population of London, and which increase has been attributed to the action of the medical staffs of hospitals with schools attached to them. 3. An appeal from an anonymous donor (who had offered on certain conditions a gift which would have increased the permanent income of the Fund by £4666 a year) to the Prince of Wales asking that, as President of the King's Fund, His Royal Highness would endeavour to prevent any of the Fund being diverted to medical education.

In reply to the first of the three questions submitted to it, the committee has very clearly indicated the intimate and complex relations which have grown up between the hospitals and schools. It points out that in the year 1903—the last year for which the accounts were then complete—eight of the hospitals in its judgment made contributions, either directly or indirectly, or both, to the schools out of the funds of the hospitals. The eight hospitals were Charing Cross, the London, the Middlesex, St. Bartholomew's, St. George's, St. Mary's, St. Thomas's, and the Westminster. In the case of Guy's Hospital and the Royal Free Hospital the committee doubts whether, in consideration of all the circumstances, the schools can be regarded as deriving any pecuniary benefit from the hospitals, but it has no hesitation in saying that no money given or subscribed to University College Hospital or to King's College Hospital was in the year 1903 contributed directly or indirectly by the hospital for the maintenance of medical education.

The committee was not required to justify, to censure, or to condemn such contributions but if we may read between the lines of several of the questions put by the committee to certain of the witnesses the inference is that, in the opinion at any rate of Lord Welby and the chairman, aid given to the medical schools by the hospitals under certain conditions is not a diversion of the funds.[1] Their remarks are in complete accord with one's own experience of the wishes of donors to hospitals, whose object is that as much good as possible should be done for the afflicted poor. The application of the knowledge gained in the wards to the relief of the sick poor beyond the walls of the hospital no doubt appeals as strongly to their charity and intelligent sympathy as the alleviation and restoration to health of the comparatively few who come within its walls. Yet the report makes no allusion to this aspect of the matter in replying to Question 3. It seems to me, however, to be one of the "general considerations applicable to all hospitals having medical schools," which might have been brought forward in justification of devoting some part of the funds of the hospitals to the needs of the medical schools. Hospitals as the arena of medical education minister to the needs of the sick poor to a manifoldly greater extent through the widely scattered medical practitioners who have been trained therein than through the medical and surgical staffs immediately in charge of the wards and out-patients of the hospitals.

The founder of a well-known Paris journal is reported to have said that a carriage accident in the Rue Tronchet is better "news copy" than an earthquake in China. What M. Villemessant meant to imply was, of course, that human nature is much more easily affected and impressed by events which occur near by than by those which happen at a distance; and that the readers of the *Figaro* are much more interested by what concerns their immediate neighbours than by the misfortunes and afflictions of persons they have never seen or previously heard of. But we need not take it for granted that every subscriber and donor to a hospital is under the sway of this natural apathy and unconcern for sufferers afar off; yet, unless it be so, we have no right to assume that hospital managers divert the funds intrusted to them for the relief of the sick poor, if they vote some portion of those funds for the maintenance and improvement of medical education.

A very important matter bearing both on the difficulties of the medical schools and the supply of trained practitioners for the sick poor throughout the land, is the necessity of keeping the cost of medical education within the limits of moderate incomes. The medical profession is chiefly recruited from persons of moderate means and moderate expectations; it does not attract many of the richer classes; the remuneration in some districts scarcely repays the qualified medical men and to add to the cost of entry into the profession would tend to encourage irregular practitioners. Suppose the medical schools agreed on raising their

[1] See Minutes of Evidence, Questions 887, 931, 937, 932, 934, 936.

fees to a figure adequately to remunerate the teachers after paying all other expenses of upkeep, rent, service, &c., only the richer men could enter the profession. Then this would happen: the very poor and the paupers would be unable to obtain medical aid owing to the reduction in the number of medical men. There would arise the outcry that the poor were allowed to die from curable diseases for want of proper advice and treatment; and the State or the ratepayers would have to subsidise the existing medical schools to induce them to lower their fees, or would be obliged to establish medical schools of their own. Possibly the State would have to educate medical men for Poor-law and club practices just as it provides the professional education of naval and military officers, the training of school teachers, and quite recently the instruction in tropical medicine of Colonial medical officers. The untoward consequences of making the fees for medical education high enough to enable the schools to continue to be self-supporting (even after the remuneration of the teachers had been reduced in many instances to a vanishing point) have never been lost sight of by the committees of the medical schools. None know better than they that "there can be no doubt of the desirability in the largest interests of the public of rendering medical men of high character and of good professional capacity, generally accessible to all classes of the population."[2] Nor could any stronger reason than this be given why the deficits of the medical schools should be made good by external pecuniary aid.

But the medical schools have been reproached with the statement that competition for fees has reduced them to the position of having to seek assistance from the funds of the hospitals. A keen critic of hospitals has asked: "I am going to put a boy, say, into the medical profession and I want to pay his fees. Why should I not pay his fees? Is it not a dreadful thing to be told that my boy is to be partly educated out of money which was given by the public for the sick poor?"[3] For anyone having this scruple a donation of £100 or so to the hospital funds would put the matter right. But looking at the question from the point of view I have mentioned I can see nothing dreadful in the position. Nor apparently did the chairman of the Medical Schools Committee, whose reply was: "You must bear in mind that the greater part of the higher education in England is eleemosynary."

Medical education, however, until the last few years has been an exception to the truth of this reply. Neither private benefaction nor public bounty has assisted it in London. Medical education is excluded from the list to which grants are made by the State. There is not, I believe, a single endowed chair in any medical school in London except the chair of physiology in University College and this has to be supplemented very largely to make the department effective.[4]

With regard to Question 2 in the "terms of reference" to the committee the answer given in the report is to the effect that the benefits arising out of the connexion between the hospitals and medical schools balance one another. Some of the witnesses, and to one's surprise medical as well as lay, who gave evidence before the committee held this view. It was asserted that the members of the hospital staffs make colossal fortunes and that the students are provided by the public with a "clinical laboratory," abounding in an enormous mass of "clinical material," for which they have nothing to pay and which otherwise would have to be provided in a hospital built and maintained by the medical school itself.

These are astounding statements. The advantages of hospitals to medical schools, of course, cannot be denied but the foregoing argument is none the less illusory. It would be even more to the point to say that the advantages conferred on the Bench and Bar by the High Courts of Justice and those conferred on the Courts of Justice by the Bench and Bar about balance one another; or that the benefits conferred on the army and navy by the country and those conferred on the country by the army and navy are mutual and equal.

It is surely grotesque to speak of the so-called "clinical material" in the light of an asset of the hospital in its account with the medical school—to liken this "clinical material" to a laboratory and, as if it were a chemical or physical laboratory, to pit its value against that of the services rendered to a hospital by medical skill and science. The "clinical material" is not in the hospital to be bartered but to be relieved and cured. The reason of the existence of a hospital is to provide the best possible medical and surgical treatment for the sick poor. To this end there must be opportunities for clinical study on the part of those who are to combat disease. That proper use is made of these opportunities is "a matter of the very greatest importance to the public and to the poor. ..... It is an integral part of the mechanism for helping the sick poor."[5]

For years the hospitals had been the gainers by their affiliation with the schools, without having to pay a single farthing in return. Sir Isambard Owen, in his interesting oration last year, said that he had estimated that the existence of the medical schools virtually added no less than £50,000 a year to the charitable resources of London and that he had not been accused of exaggeration. But be that as it may, can one imagine such a state of indifference to the public weal, or such injustice to individuals, on the part of hospital managers as to suppose them capable of closing their doors to medical teaching or of attempting to make something for their hospitals out of the "clinical material" and the fees paid for clinical instruction?

Let us take the case of the fees paid by students attending hospitals supported by rates. What becomes of them? Students have to produce a certificate of having attended a three months' course of practical instruction at a hospital for infectious diseases; candidates for a diploma in public health, a certificate of having attended during three months the practice of such a hospital and of having done so with the opportunity of studying also the methods of administration. These requirements of the General Medical Council are met by the Metropolitan Asylums Board arranging for students' classes in the wards and providing a limited number of resident clinical assistantships. The clinical assistants get their board and lodging free, their services being considered as the equivalent. The fees paid for instruction go as to two-thirds of them to the senior medical officer and as to one-third to the Metropolitan Asylums Board to pay expenses for use of waiting-room, service of porter, printing notices and certificates, &c.

These hospitals being statute-ruled, the Asylums Board has to guard against the possible imputation that any part of the cost of medical education is charged to the rates; but it makes no tax on the use of the "clinical material." This arrangement surely is of itself a practical admission that it is those who do the teaching, not the hospital which masses the "clinical material," to whom the students and the schools are indebted.

Moreover, students go to a medical school, not because of the hospital, but because of the traditions and renown of the school, or because of the repute of this or that member of the staff. Take away from the hospital the distinction given to it by the school traditions and by the reputation of the medical and surgical staff and other teachers and the whole character and importance of the hospital would be changed.

I have said enough, I hope, to show that the report of the committee does less than justice to the medical schools by saying that the mutual benefits of the hospital and school "may be fairly set off the one against the other." But the committee further says: "The evidence satisfies us that the expenses incurred in hospitals with schools are generally in excess of those in hospitals without schools." Figures have been produced by Sir Henry Burdett to show that a medical school adds from 15 to 25 per cent. to the total cost per bed, as compared with the cost per bed in the hospitals without medical schools.[6] It came out, however, incidentally, in Sir Henry Burdett's own evidence before the committee, that a medical school was not invariably or necessarily associated with a higher rate of expenditure;[7] and Mr. Martin White in the *Times* of March 18th last has proved by a comprehensive tabular comparison of 13 Scotch, provincial, and London hospitals that the cost of management is not increased by medical schools but that many of the provincial and Scotch hospitals with medical schools are worked quite economically.

The report of the "Medical Schools Committee," besides replying to the three questions of reference, contains a *recommendation* as to moneys contributed to hospitals in

[2] The Times leading article, Feb. 1st, 1905.
[3] Medical Schools Committee, Q. 893.
[4] Report of the Medical Schools Committee, Q. 175.
[5] Sir Arthur Rücker, Report of the Medical Schools Committee, Q. 112.
[6] Year-book, 1905, and the Times, Feb. 1st, 1905.
[7] The Minutes of the Medical Schools Committee, Q. 845, 847, 849, to 853.

future, and also some remarks on "*certain matters*" which came before it in the course of its inquiries and which it considered to be closely connected with the subjects of reference. The recommendation is:—

> That the distinction between hospital and school should in every case be drawn, not only definitely and exactly, but with such clearness that it may be understood by the general public, and so that no question may arise as to the destination and application of moneys contributed, whether by the King's Fund or from any other source.

As a result of this recommendation the General Council of the King's Fund has notified to the hospitals "that no grants will be made from the King's Fund as from and after Jan. 1st, 1906, to any hospitals which make payments to, or on account of, their medical schools out of general funds subscribed for the relief of the sick poor."[8]

As a matter of fact, the grants from the King's Fund to the hospitals with medical schools are but a very small part of the incomes of those hospitals, and the actual contributions to the schools out of the hospital funds form but a very small fraction of the expenditure of the hospitals. Thus in the case of the Middlesex Hospital the annual grant from the King's Fund is about £2000; the annual expenditure of the hospital is between £34,000 and £40,000, and the largest contribution made in one year out of the hospital funds towards the school is £965 8*s.* 11*d.*,[9] or less than 3 per cent. of the total expenditure. St. Mary's Hospital, with an annual expenditure of about £32,000, receives from the King's Fund about £2000 a year; the amount given to the school out of the general funds of the hospital in 1903 was £652.[10] St. Thomas's Hospital, with an annual expenditure of £62,000, does not receive a grant from the King's Fund every year. The grant in 1903 was £1800; the amount paid for or to the school out of the hospital funds was £1253 3*s.* 11*d.*,[11] or a little over 2 per cent. of the total expenditure.

The hospitals naturally wish to stand well with the King's Fund, and besides it is not only the loss of the grants from the King's Fund with which the hospitals which assist medical education out of their general funds are threatened, but the grants from the Hospital Sunday Fund—which in the case of the Middlesex Hospital and St. Mary's Hospital are somewhat larger than those from the King's Fund—will also, no doubt, be discontinued. At the last two annual meetings of the Metropolitan Hospital Sunday Fund resolutions were moved to the effect that no grants should be made to hospitals which contribute to the support of medical schools or laboratories from the general fund. Although on each occasion the resolution was withdrawn there is every reason to believe that at the next annual meeting the example set by the King's Fund will be followed by the Hospital Sunday Fund.

It is to be hoped, therefore, that those hospitals which have hitherto assisted their medical schools, and which do not feel justified in foregoing the grants from the King's Fund, will at once establish a "Medical School Fund" which can be used, at the discretion of the governing body of the hospital, for the requirements of its medical school; and also that those who are interested in securing the wider range of good done to the sick poor by the medical profession, than that confined within the actual limits of a hospital, will use their efforts to support such separate fund.

At the London Hospital a discretionary fund—that is, a fund to be used in part or in whole, at the discretion of the committee of management, for either hospital or school—has, in fact, already been opened, and within a week of its being started the amount transferred to it by the subscribers was more than twice the amount ever contributed to the school by the hospital.[12] There is no reason to doubt that similar generosity towards the other medical schools will be shown by the supporters of the other hospitals and that a response will be made to the claims and the needs of the schools if these needs are made widely known by the establishment of a separate and distinct fund.

The two "*certain matters*" as to which the "Medical Schools Committee" records its impressions are: (1) the broad line of distinction drawn between the studies of the first three years of the medical student's curriculum and those of the last two years; and (2) the effort now being made on the part of the University of London to concentrate the teaching of the preliminary and intermediate subjects of the medical student's curriculum, and as to which the committee expresses its "great satisfaction." The committee considers that "the earlier studies have no real relation with a hospital, and are therefore more properly to be pursued in an institution of a University character." Probably the committee inferred that the instruction to the Senate by the Statutory Commissioners of 1898 is in accord with the views of the whole of the 350–400 members of the Medical Faculty of the University. The committee, however, does not seem to have been informed that the average attendance at the meetings of the faculty is only 45; that only 48 members were present at the meeting when the reply of the faculty to the inquiries of the Senate of Feb. 19th, 1902, with regard to the proposed institute of medical sciences was passed; and that it is doubtful whether one-fifth of the members have ever attended a single meeting, or know what takes place at the meetings, of the Faculty.

It is the teaching of the preliminary science subjects *only* of which the medical schools ought to be relieved. This is the burthen which, especially since the coming into force in 1892 of the five years' curriculum, the schools have found it so difficult to bear—under which, in fact, they have broken down. These are the classes which, as arranged for medical students alone, have never paid, and which even at University College and King's College, where the departments of chemistry, physics, botany, and zoology are departments of the faculty of science as well as of that of medicine, are the most expensive and costly in the faculty of science. Even at these two colleges, in spite of endowments, grants from the Treasury for science teaching, and from the London County Council, it is extremely difficult to make these classes pay their way.[13]

Melbourne and Sydney, I am told, have had the same experience as the London colleges in regard to the unprofitableness of teaching preliminary sciences in medical schools. The proper relief from this burthen is to require that these courses of study should be taken and closed by passing an examination in them before the students are allowed to count the commencement of the medical curriculum.

Huxley, in a memorandum to the Senate of the London University, said "that the student ought to have acquired, as part of his general education, such knowledge of physics, chemistry, and elementary biology as is now demanded of him."[14] The General Medical Council and the two Royal Medical Colleges in London have approved in principle of these subjects being treated as matters of preliminary scientific education and of an examination being passed in them after the examination in general education and before the commencement of medical studies proper. The mistake has been in allowing students to count any part of the time spent at a medical school before having passed the examination in preliminary science.

There would be no difficulty in students getting instruction in these subjects if the medical schools gave up teaching them. At present many intending medical students take out their courses in chemistry, physics, and biology before leaving school; most of the good secondary schools in England now have science departments and many have been inspected and found thoroughly efficient by the two Royal Colleges. In fact, the Colleges have given encouragement to secondary schools in this direction. Other places of instruction would soon become available. The Birkbeck Institution has a considerable reputation. At South Kensington and at various polytechnics and municipal institutions the teaching of the preliminary sciences is excellent in its way, and if not at the present moment quite suitable for medical students would no doubt soon become so if the teachers were encouraged to hold special courses for intending medical and dental students, and it would well pay them to do this. Examinations in these subjects could be held at the Examination Hall and elsewhere as now, or as an alternative a "leaving school certificate" might be accepted. For the preliminary scientific examination for the degrees of M.B. and B.S. of the University of London the classes at University College and King's College would still be available. Epsom

[8] The Times, April 14th, 1905.

[9] These contributions from the several hospitals to the medical schools are the sums in money actually paid over by the hospitals for or towards the school expenses.

[10] Ibid. [11] Ibid.

[12] The Times, March 24th, 1905, letter from Lord Stanley.

[13] Foster: Medical Schools Committee's Report, p. 31. Headlam: Medical Schools Committee's Report, pp. 81–83.

[14] See Minutes of Evidence "University for London Commission," 1889. Q. 1079, p. 99–100.

College also sends up many boys who pass this examination straight from school.

One important reason why the departments of chemistry and physics and biology have been so great a burden to the medical schools is that they have to be maintained in a thoroughly efficient state with a view to the teaching of those subjects up to the standard of the preliminary scientific examination of the University of London, and whilst the schools thereby incur considerable expense they do not receive the fees of all their students for the teaching of these subjects. This is due to the regulations of the University and of the Royal Colleges which permit of the courses of instruction in chemistry, physics, and biology being taken elsewhere than at a medical school. In a very considerable number of cases this permission is taken advantage of, so that when these students come to a medical school they claim exemption from the payment of the fees allotted to those subjects. This is not the case with anatomy and physiology, in which subjects all students must receive instruction at a medical school and pay the fees for these subjects.

Indeed, it is altogether different with regard to anatomy and physiology. They are the corner-stones of the foundation of scientific medicine and surgery and as such are not to be relegated to the limbo of the neglected or forgotten, after having been studied for two winters and a summer session. The dissecting rooms and the laboratories should be easy of access to the student throughout the whole period of studentship. A conference with the teacher of anatomy or physiology on a difficult or doubtful point is not infrequently of much assistance to a surgeon or physician of the hospital. Whatever may be the case with physiology, it will be quite impossible entirely to banish anatomy from the proximity of the schools attached to hospitals. Provision must always be made thereat for teaching surgical anatomy and for operations on the cadaver; and proper facilities to dissect must be given to senior men who are going up for such examinations as the Fellowship of the Royal College of Surgeons of England.

Those who advocate the concentration of teaching in these subjects at one or more centres away from the clinical schools affirm that "owing to the widening of the scientific basis of medicine and surgery and to the increasing attention given to the teaching of these scientific subjects it has become necessary to intrust these subjects to teachers exclusively occupied with them."[15] This statement contains in itself one of the strongest reasons for not allowing the teaching of anatomy and physiology to pass entirely under the control of pure anatomists and physiologists, as it would do at central schools presided over by professors in these subjects.

There is wisdom in providing for what is essential rather than for what is superfluous. It is possible to have a "basis" so wide as to be out of proportion to the structure reared upon it. It is possible to teach a subject as if the knowledge of it is the end in itself instead of a means to another end. In the teaching of physiology to medical students there has been a great tendency in this direction and the tendency would have become an actual reality had the examining bodies not kept a tight hand on the physiology examiners. But though the professors at centralised schools (who would be also the examiners) would themselves be exclusively occupied with their subject, the demonstrators, who would do the bulk of the teaching, would not be so any more than they now are but would take up the teaching, as they do at present, "as affording temporary occupation prior to entering upon other and more remunerative work elsewhere"—in other words, whilst waiting for hospital appointments. The demonstrators, however, would be under the disadvantage of having to spend the greater part of their time at the teaching centre, miles away from their hospitals, and would not be able to keep so closely in touch with clinical and pathological work as they do now, except at considerable expense and loss of time in travelling to and fro. The distance of the University at Kensington from the hospitals and from the residences of the teachers was considered by the late dean to be an explanation of the scanty attendances at the meetings of the medical faculty—few and far between as they are. What a great drawback, therefore, would the distance be to those who would daily have to go to and fro from one place of occupation to the other.

[15] An appeal by the Senate for funds to endow an Institute of Medical Science.

Concentration, too, has its disadvantages in the case of sciences which have to be learnt largely by the student's own manual efforts and have to be taught by direct demonstration to the individual student, as well as to classes, or by lectures. Moreover, all young men are not alike as to the the conditions under which they can work best. Many prefer to go to, and work better at, a medical school where there are but few students. As to the personal preference of the students themselves there are few, if any, amongst past and present students who are not glad that their own student-days arrived before any scheme of concentration could keep them for three years at a central institute away from the hospital of their selection.

It is said that the present system of teaching anatomy and physiology in 12 centres in London is at once "wasteful and inefficient." I shall be able, I think, to show that neither of these charges is justified. The objection, on the ground of inefficiency, to anatomy and physiology being taught by those who are looking not to teaching these subjects but to practising as surgeons and physicians as their principal work in life ought to be silenced by recalling the names of some of the past teachers. To mention only some few who are deceased, let us take for instance, Moxon and Hilton Fagge, who were demonstrators of anatomy at Guy's; or Kirkes, Savory, and Morrant Baker, who were teachers of physiology at St. Bartholomew's, or George Murray Humphry, the author of "The Human Skeleton" and of treatises on the "Limbs of Vertebrate Animals," &c. One of the best teachers of anatomy of his day was John Hilton, whose admirable dissections, copied in wax by the late Mr. Towne, are some of the chief attractions in the Guy's Hospital Museum and whose classical work on "Rest and Pain" is a monument of anatomical knowledge applied to the elucidation of obscure surgical affections. Sir Charles Bell—of whose work Müller, the great German physiologist, said: "The discovery of the circulation of the blood by Harvey and the discoveries of Sir Charles Bell on the nervous system are the two grandest discoveries that have ever been made in physiological science"—taught anatomy and physiology at a medical school at the same time that he was one of the surgeons of the Middlesex Hospital and was engaged in a considerable private practice as a consulting and operating surgeon. Towards the end of his London career Sir Charles Bell, whose pride, as he said, it ever was "to join the pursuits of science with practice," helped largely in establishing the medical school of the Middlesex Hospital and gave the first series of lectures on anatomy and physiology in that school. Then followed in the same chair Alexander Shaw, Bell's friend and assistant, a good anatomist and the author of some excellent treatises on surgery. Erasmus Wilson came after Shaw. His devotion to anatomical and physiological teaching and to writing "The Anatomist's Vade Mecum"—the popular text-book with students of that day—did not prevent him becoming the leading dermatologist of this country. Campbell De Morgan and Charles Moore, both surgeons to the Middlesex Hospital, have graven their names conspicuously into the history of the modern operative treatment of cancer by work they did whilst teaching anatomy at the same time. De Morgan for 19 years taught also physiology, and, conjointly with the elder Tomes, has left his name indelibly recorded in the Philosophical Transactions (1853) by their memoir on "The Structure and Development of Bone." Sir William Flower, the late conservator of the Hunterian and then of the Natural History Museums, in the earlier part of his career was assistant surgeon to, and teacher of practical anatomy at, the Middlesex Hospital. During this time he produced those excellent charts of the nervous system which have been of great assistance to many generations of students and laid down the foundation of his work on craniology. J. W. Hulke taught physiology and made an important contribution on the "Anatomy of the Retina." The late Arthur Hensman, who for several years demonstrated and lectured on anatomy at the Middlesex Hospital Medical School, was also surgeon to the throat and ear department of the hospital. He was an admirable draughtsman and a most successful teacher of anatomy.

This is no mean list of distinguished teachers at one school, and that one of the smaller ones, since 1835. It would be easy to mention many others, living as well as dead, who have brought renown to their respective schools in the double rôle of teacher of anatomy or physiology and of surgeon or physician to the hospital to which the school is attached.

The arrangements at the University of Cambridge are

sometimes urged as an example in support of separating the place of the intermediate science teaching from the medical schools in connexion with the hospitals. But it is an example, in my opinion, not to be followed. Several Cambridge men, as it is, come to London for their anatomy and from what I hear are well pleased at doing so. At any rate, it is quite certain that medical undergraduates at an institute at South Kensington will not reap the advantages attending a residence at Oxford or Cambridge—advantages which perhaps go some way to compensate for the delay in joining a medical school immediately attached to a hospital.

Nor can the conditions which exist in the provinces or in Scotland be compared with those in London. The amalgamation of a Sydenham College attached to the General Hospital, with the Queen's College in connexion with the Queen's Hospital, into a medical faculty of the University of Birmingham, or the combination of the separate hospitals and colleges of Liverpool into a University of Liverpool, is quite a different thing from concentrating the preliminary and intermediate science teaching of the separate schools of medicine in London.

In the case of the Durham undergraduates in medicine, their instruction in the preliminary sciences, as well as in anatomy and physiology, is given at Newcastle, in College buildings quite close to the Royal General Infirmary of Newcastle, which is the clinical hospital for the medical students of the University of Durham. It would be no less reasonable for the University of Durham to insist on the students of the medical faculty doing their anatomy and physiology and other science courses at Durham, which is 17 minutes by train from Newcastle, instead of at Newcastle, than it would be to require the London medical students to attend these courses, far away from their several hospitals, at South Kensington.

The fact is that London, from its vastness of area and of population, has, and requires, not one medical school but several. The London system differs, it is true, from that of Edinburgh and the provinces, as well as from that of Paris, Berlin, Vienna, and other continental cities. But the educational work it has accomplished, the well-trained practitioners it has turned out, its contributions to science, and its discoveries in diagnosis and treatment, have not been surpassed by those of any medical centre in the world. London has cause to be proud of her medical schools and in the interest of the hospitals, of the sick poor, and of the whole community she would do well to make a great effort to retain them.

Sir Edward Fry's Committee has amply pointed out how great are the benefits which the hospitals derive from the medical schools. This being also universally admitted, why take steps to concentrate the teaching of anatomy and physiology at a few centres when the probable result will be the deterioration, if not the actual extinction, even as places of clinical instruction, of at least three or four of the existing medical schools? It cannot be said that there is a preponderating desire on the part of the schools to be rid of the teaching of these subjects, because in the answers given in reply to a memorandum issued in 1901 by the Faculty of Medicine only four out of the 12 schools gave an unqualified assent to the concentration of anatomy and only five to that of physiology—and this in spite of their financial difficulties.

With regard to the scheme for establishing an Institute of Medical Sciences in South Kensington, it is interesting to recall how the idea of it came about. In the latter half of the "eighties" of last century the medical teachers in London took alarm at the decrease in the annual entries of medical students in London, so they joined University College and King's College in the demand for a teaching university which was to grant medical degrees on easy terms. In their anxiety they quite ignored the fact that, as to its medical faculty, the University of London was, and had always been, a teaching university; that by its Charters (Clause 37) it required evidence of study completed in accordance with regulations determined by the Chancellor, Vice-Chancellor, and Fellows; that the courses of study were laid down by the Senate after communications and conferences with colleges, professors, and examiners; and that these courses had to be taken at certain medical institutions recognised by the Senate. In other words, the University of London only admitted to its degrees in medicine and surgery such persons as had followed a curriculum of its own planning at institutions of its own approval. It thereby controlled medical teaching as well as examinations, and the institutions approved became *de facto* constituent parts or affiliated colleges of the University. Such a university is no less a teaching university than a boiler-maker living at Greenwich, whose capital is raised by syndicate and whose workshops are scattered at Erith, is any the less a boiler-maker because there is no hammering going on at his home premises. But the Gresham University scheme failed and in its stead the existing University of London was altered in 1898 by statutes. Still, there was no prospect of a London M.D. degree on terms to suit the general run of students, so a sop was thrown to Cerberus by the Statutory Commissioners, who reaffirmed the opinion of the Gresham University Commissioners (1894) that in certain groups of studies concentration ought to be effected; but they did not feel justified, however, in framing statutes to give effect to this opinion, because they found from representations made to them on behalf of the medical schools a want of such consensus of views as enabled them to do so. They therefore laid down the following instruction: "The Senate shall use its best endeavours whenever practicable to secure such common courses of instruction for internal medical students in the preliminary and intermediate portion of their studies under appointed or recognised teachers at one or more centres." These words are a part of the unfortunate and now notorious Statute No. 80—a statute which threw medical education in London into a state of distraction and has kept the teachers in a state of paralysing uncertainty ever since, and which, because it has been quoted by Sir Edward Fry's Committee "with great satisfaction," is on the eve of causing a considerable crisis.

The same statements which were used to advance the Gresham University as a teaching university granting easily attainable degrees are now being employed to bring Statute No. 80 into being in the form of the proposed Institute of Medical Sciences of the University of London. The institute, we are told, is necessary "for the improvement of medical teaching," to "restore London to the place it once held as a great centre of medical education," and to provide "a really great metropolitan school." The preliminary and intermediate subjects, it is said, are now being better taught in the provinces than in London with better apparatus and by better paid teachers, whilst competition between a great number of little schools is destroying medical education in London and injuring the London hospitals by a clear diversion of the funds.[16]

A fact is not created by affirming that it exists; but experience has shown that it is possible to go on saying the thing that is not so often that at length one actually comes to believe it to be the thing that is; and one may even go a step further and repeat it again and again, until one induces other people to believe it too. But the answer to the above fictitious statements is to be found in the evidence of the Principal of the University of London.[17] Sir Arthur Rücker told the "Medical Schools Committee" that "to compare the Medical Faculty of the University of London with the Medical Faculty of any other University whatever is really to compare two things which are in different orders of magnitude. Few, if any, provincial towns have more than one great hospital and possibly a good dispensary. Here we have 12 great medical schools, of which the principal ones are superior—at least equal—to those in any of the provincial towns."

The real origin of each of these movements (the Gresham University and the Institute) was the desire on the part of the London teachers to bring back, if possible, the medical students to London and, failing that, to be rid of the burdensome expenditure on the teaching of the earlier subjects of the curriculum. The position, however, is not that medical education in London has not been kept up to date but that the education in the provinces has made such great strides. In the beginning of the decline of the London entries it was cynically said "that the medical education of the country was year by year being injured by the drawing away from London of a large number of students who will go where they can get a degree, even if they cannot get the learning, and that that ought to be remedied at almost any cost."[18]

But provincial colleges have become provincial universities; local munificence has richly endowed them;

[16] Minutes of Evidence, Medical Schools Committee, Q. 894.

[17] Minutes of Evidence, Q. 112.

[18] Quoted in Lord Justice Fry's evidence before the (1888) Royal Commissioners, p. 99.

large hospitals and infirmaries are in their immediate neighbourhood, and thus all the requirements of a good medical school are combined. Rich in the fulness and variety of clinical material they have also ample funds for teaching the preliminary and ancillary sciences as well. These universities can now impart "the learning" as well as give "a degree" and the cynics therefore should no longer wonder that many students, loving country life and finding near at home the opportunity of getting *both* the professional training and the university degree, prefer to enter at the provincial universities. Nor is it surprising that their guardians or parents prefer sending them there rather than to London where they are far away from home influences and surrounded by the distractions and temptations of a great metropolis.

When will the London teachers realise that this condition of things has come to stay? A jealous coquette does not impair the charms of her rival by vainly striving to improve her own. Nor will any efforts to increase the attractions of the London medical teaching detract from those possessed by the provincial universities.

It is a matter for surprise that Sir Edward Fry's Committee should have gone so far beyond the "terms of reference" to them as to express satisfaction at the University of London scheme of concentration. It is a significant fact that the first questions of the Bishop of Stepney to the first witness who came before the committee distinctly postulate the advantages claimed for it. But one's surprise centres around the attitude of Sir Edward Fry. If we refer to the Blue Books of 1889 and 1894 and carefully peruse the evidence given by Lord Justice Fry in 1888 and by Sir Edward Fry in 1892 we find that though favourable to some inter-collegiate arrangement on the part of the smaller medical schools for teaching the subjects of the preliminary scientific examination of the University of London he was a strong and persistent opponent of placing the whole teaching in London under one control; that whilst he desired to maintain competition between the colleges in a university he expressed himself resolutely against the ill consequences of competition between universities; that, though in favour of a university controlling teaching by inspecting and reporting on teaching bodies, he was opposed to the University itself doing the teaching, and he quoted with approval and at great length from an address by Professor Chrystal of Edinburgh as to the drawbacks and dangers of the universities competing with the secondary schools for work which the schools can do as well as, or even better than, the universities can. It was not therefore to be expected that we should find Sir Edward Fry now viewing with satisfaction the proposal of the University of London to do all those things which ten years ago he thought so harmful—namely, to compete not only with the provincial universities, but with the medical schools which stand aloof from the concentration scheme, and with the secondary schools.

Now as to the charge of *wastefulness* which has been brought against the present system, more especially by the enthusiasts of the University of London Institute scheme. It was told in evidence to the "Medical Schools Committee" that in 1901 there were between 80 and 90 teachers for 1250 students of anatomy and physiology at the 11 medical schools of London, and that "the amount of money which was expended in salaries alone for the teaching of those subjects was more than £10,000 a year."[19]

If we compare these figures with those put forward by the University of London we find that the Senate is appealing to the public for £375,000 for building, equipping, and endowing the institute. (The estimate of the Committee of the Senate was £40,000 more—viz., £415,000.) The total annual cost of maintenance is estimated at £23,500. One hundred thousand pounds are to be spent on building and equipping the anatomical and physiological work-rooms. The salaries of the teachers of anatomy are set down at £5000 a year, those of the teachers of physiology at £5500 a year—i.e., £10,500 for the teachers of these two subjects. The proposed numbers of teachers of anatomy and physiology are nine professors and 24 assistant professors and demonstrators. The number of students to be provided for is 500. We see, therefore, that 33 teachers and £10,500 a year for salaries are the requirements by the University for 500 students. Now 33 teachers for 500 students are in the same proportion as 83 for 1250 students and £10,500 as salaries for teachers for 500 students are in the same proportion as £26,250 for the teachers of 1250 students; so that whilst the proportion of teachers is practically the same the amount paid in salaries for instructing 1250 students at the 11 separate medical schools is at the rate of £16,250 a year less than the salaries proposed to be paid for 500 students at the University institute. If to this be added the interest on the £100,000 sunk in buildings and equipment for the anatomical and physiological sections of the institute and the dead loss to the existing schools if buildings, plant, and ground space now covered by the present dissecting rooms and laboratories be thrown out of use, there is no difficulty in seeing that the charge of wastefulness recoils with greatly added force upon those who have made it.

The University of London as yet has neither the site for the buildings nor more than a fraction of the sum wanted to build and to endow. Even if both these needs were satisfied four or five years at least must elapse before the institute could be in working order; and if the existing medical schools, or some of them, should find it necessary to close their doors from and after 1906 when the decree of the council of the King's Fund comes into force medical education in London will be cast between the devil and the deep sea. The lot of the students will be like that of the children whose governess, thinking they ought to have a change of playthings, threw away the old toys before she could provide the new, with the result that the poor children were left with nothing to play with.

Any system which keeps a medical student away from the hospital for three years out of the five ought to be absolutely condemned. When the four-year curriculum was lengthened the intention was to add a year for clinical work but somehow the preliminary science teachers and the physiologists have been allowed to appropriate it. The final two years are consequently overladen; the students complain that too much of their time is given up to preliminary studies and too little to acquire a knowledge of the main work of their lives, and medical practitioners all over the country complain that the recently qualified assistants are very badly up in their practical work. A long experience as a lecturer and an examiner has convinced me that these complaints are well-founded.

In Germany, where the students commence to follow the "clinics" in the latter half of their second year, the authorities have become convinced that the teaching under the five years' system is not adequate to the needs of medical practice. Since 1900 loud voices have been raised pointing out that the education was too theoretical, and in 1902 the matter was taken up by the Prussian Minister of Education with the result that new regulations coming into force in 1906 require a sixth year which is to be spent entirely in clinical study and in holding hospital appointments. Hospitals with over 100 beds not previously connected with medical schools or universities are to form "academies" for this purpose.

With us in London the remedy is not exactly to add a sixth year to the medical curriculum but to relieve the curriculum of subjects which ought to be required as part of a liberal education before entrance on special medical studies. If the preliminary sciences were made to form part of school education the whole of the last three years or more could be devoted to clinical work and the other advanced medical studies; and the University of London could withdraw with grace from an attitude of rivalry with the secondary schools, and from the attempt to run a day-school at South Kensington for teaching medical undergraduates in their first year the elements of chemistry, physics, and biology.

There would still, however, be room for an institute of medical sciences in connexion with the University of London; for University courses of lectures on important subjects not taught elsewhere; and for post-graduate instruction in the higher grades of medical and non-medical subjects.

Courses of lectures and professorships might well be established in the subjects specified by the Statutory Commissioners—namely, (*a*) law, as a science and as a part of a liberal education; and (*b*) the theory, practice, and history of education. The philosophical study of the principles which underlie all systems of law would, as the Commissioners pointed out, be of great value not only to the professional lawyer but also to diplomatists, colonial

[19] Minutes of Evidence, Q. 684.

governors, magistrates, and others who have to administer the law; whilst a course or courses of lectures on pedagogy would be of the greatest service to those engaged in secondary teaching, as well as to those in training to teach in elementary schools.

The subjects which come within the purview of an institute of medical sciences in connexion with a university, in which professorships and courses of lectures are wanted, are comparative anatomy and biology; biology of living organisms known to cause disease—i.e., biology in relation to pathology; the more advanced branches of general physiology, physiological chemistry, and experimental psychology; tropical diseases; and the application of bacteriology to testing articles of food and to the micro-parasitic diseases of domestic animals. Medical men and others going to the colonies or to the tropics would be glad of some knowledge of Texas fever, tsetse-fly disease, surra, and African horse sickness, &c.; and those at home and abroad would like to know more about the organisms swarming around us and which affect the health of man and cause devastation amongst cattle. But the most pressing need is adequate provision for scientific research and adequate accommodation for training future research workers. Men are required who possess the technical skill necessary to make independent investigations in any part of the empire. There are many important problems waiting to be unravelled by investigators efficiently trained.

The field for research is wide enough and varied enough but the opportunities of learning technique and gaining skill therein are insufficient and in consequence the skilled labourers are few. The University of London could do nothing of greater scientific usefulness, nothing likely to be more beneficial to the public, nothing more becoming its own position and reputation as the greatest medical university, than found an institute of medical science for training research workers. This might be done by the University alone or conjointly with the two Royal Medical Colleges, and either by means of State aid, and help from the Royal Society, or by means of funds raised through private liberality and patriotism. There would thus come to be a supply of trained workers whose services would be available when required by Government or by commercial and industrial companies for original research work, either abroad or at home. The professors at the institute would conduct research work both of an independent and of a check or corroborating character; to them would no doubt be referred questions of difficulty, doubt, or differences of opinion. They might also initiate, assist, or coördinate researches conducted elsewhere with the consent and goodwill of the authorities of institutions as, for examples, at hospitals having specially favourable or extended fields for observation or study of special diseases. Questions concerning tubercle, cancer, infectious diseases, tropical diseases, mental diseases, and diseases of the general nervous system might thus be helped to a solution. Such an institute for scientific research would be a crowning distinction to our University and would serve as a training ground and indirectly as a source of future income, for many of the ablest and most scientific members of the profession; whilst the discoveries to which it would lead would be a means of improving the health and increasing the prosperity of those living in disease-infested regions and would in this way prove a blessing to the whole empire and even to the world at large.

NORTH-EASTERN HOSPITAL FOR CHILDREN, LONDON.—The Duke of Argyll has written to the *Times* a letter dated May 6th pointing out that this hospital, which is situated in the Hackney-road, Bethnal Green, in the midst of some of London's poorest districts, needs £9000 to pay off a mortgage on its new building completed in 1903 and £6000 to make up the required income of £11,000 for the year. With the object of obtaining these sums, the Lord Mayor, at the suggestion of H.R.H. Princess Henry of Battenberg, president of the Ladies' Association, has consented to preside at a luncheon at the Mansion House on May 22nd. The Duke of Argyll adds that having been associated with the hospital from its earliest years he can testify to its deserving character and that the fact that King Edward's Hospital Fund gives the hospital an annual subscription of £500 and has, in addition, made grants to the building fund amounting to £4250, is sufficient evidence of satisfactory work and management. Cheques made payable to the secretary, Mr. T. Glenton-Kerr, and crossed "Barclay and Co., Lombard-street," may be sent to the Lord Mayor at the Mansion House or to the secretary at the hospital.

The Lumleian Lectures
ON
NUTRITION AND MALNUTRITION.

Delivered before the Royal College of Physicians of London on March 28th and 30th and April 4th, 1905,

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LECTURE III.[1]

Delivered on April 4th.

MR. PRESIDENT AND GENTLEMEN,—I have attempted to put before you in my previous lectures a general conception of what may be meant by nutrition and in so doing I have endeavoured to bring forward the most important of the recent work that has been done in connexion with the various processes which the function embraces. It may be objected that in a course of lectures such as these and before such an audience as I have had the honour to address I was scarcely fulfilling my duty by devoting such a disproportionate share of my time to the consideration of the normal living. I must confess, however, that I am impenitent and that I have erred, if error it be, with intent. For, believing as I do, and as every physician I should think must do, that however successful one may be by patient observation and inquiry in acquiring a knowledge of the clinical manifestations of disease and by due reasoning thereon arrive at what we call a diagnosis, or venture on a forecast, and fortunate as we may be in devising means of relief and methods of treatment, there still must remain a constant desire to get deeper to the bottom of things and to form some idea, however provisional, however imaginary, of the actual changes that are taking place in the living elements themselves. I do not believe that to indulge in such speculations, provided always that they be held with proper reserve and subordinated to the ever-accumulating facts that physiology and pathology teach, impairs in the slightest the physician's claim to be regarded as a practical man, whilst that it confers an added interest to his work is indisputable. The mere accumulation of "facts" so called, often to be upset as more precise and extended observation becomes possible, finds after all its chiefest value in furnishing the data whence may be ascertained the general principles of relationship which obtain amongst them, and it is such principles which form the basis of our science and our art. I must admit also that I was largely prompted to my choice of subject, apart from the great interest I have always taken in it, by the opportunity that these lectures offered of placing before you some of the results of the labours of that increasing band of workers at the problems of bio-chemistry, whence I feel assured physiology and pathology as well as rational therapeutics will receive the surest and most important assistance for their advancement. Such results are not, in my opinion, sufficiently often placed before those of us who are more actively concerned in the practice of our profession, are not made sufficiently accessible, not set forth with adequate indication of their bearing and significance, even so far as scientific caution might permit.[2] That I have occupied so much of my time as I have done in discussing the conditions and stages of nutrition appeared to me to be desirable and even necessary if I were to approach the subject of perverted nutrition on anything like a scientific basis, as without a knowledge of the normal, imperfect though it be, any conceptions as to the nature of the morbid states must be fundamentally vague and uncertain.

I have considered nutrition as that series of changes which the ingesta undergo in the body to fit them for use by the living matter in the maintenance of its own integrity and

[1] Lecture I. and the first and second parts of Lecture II. were published in THE LANCET of April 29th (p. 1111) and May 6th (p. 1180) and 13th (p. 1250), 1905, respectively.

[2] As exceptions to this statement may be mentioned several papers recently brought before the Pathological Society in which have been summarised some of the later work done in connexion with the problems of nutrition.

as the material from which energy is liberated. In the course of those changes the food-stuffs exhibit alternate disintegrations and integrations, finally to be excreted in a far simpler chemical condition than that in which they originally entered the body. In the first group of changes which comprise the function of digestion the proteids, carbohydrates, and fats to become capable of absorption into the blood undergo hydrolytic decomposition with the formation of products of less chemical complexity and this with but little loss of potential energy. During absorption by the intestinal epithelium some of these analytic changes are continued, more particularly by the proteids whilst the fats are in parts synthesised. Arrived at the liver a further synthesis takes place in the sugars and fats and perhaps also, though less probably, in the case of the proteids. Between this stage and the ultimate assimilation by the living protoplasm, these food-stuffs are in varying degree stored up in an insoluble form in different organs, liver, muscle, and adipose tissue especially, there to be made soluble by the same kind of agents with which they were dealt with in the process of digestion. Carried in the blood and lymph currents they may again be stored up, again to be converted into diffusible form. Among, also, these three groups of substances interchanges occur, whereby much of the starch foods is converted into fat, and proteids by decomposition set free a hexose group of atoms which may in its turn become fat. I pointed out that we had good reason to attribute these marvellous changes, comparable as they are to the ordinary chemical reactions which take place in our laboratories, but there only effected by reagents and temperatures that would be destructive of the living tissues, to the katalytic action of ferments which are themselves the specialised products of living matter. To bodies of this nature also it seems probable that the oxygen owes its ability to take part in the various syntheses and also to effect the katabolic changes which follow from oxidation; since at the body temperature the mere juxtaposition of oxygen and fat or sugar would be unable to bring about either oxygenation or oxidation results. Foremost among the capabilities of these wonderful enzymes are their adaptibility to the requirements made upon them and their reversibility of action, determined as these are by the conditions of the medium in which they are at work, on the presence or absence of the products of their activity and the degree of concentration of these products. Nor is it only outside the living cell that these ferment bodies effect their results; the intracellular processes whereby the protoplasmic molecule is enabled to synthesise the substance of its own composition from the comparatively simpler amido-acids and similar bodies, each variety of protoplasm manufacturing its own peculiar quality from, so to say, a common raw material presented alike to the nerve cell, to muscle fibre, and the secreting cell, all this I say, which is at the very centre of life itself, appears to be the resultant of ferment action. Although it is not contended that to express the problem in these terms is to offer a complete explanation of it, it is at least a step further towards the final solution and arguing from the known to the unknown, the hypothesis is not inconsistent with what is well ascertained and such a conception furnishes at least a coherent and intelligible basis from which to proceed further, provisional and tentative as it may be. Even more theoretical, though not wholly without grounds, is the reference of this vital activity of cells to ionic action, a view, be it observed, that really for the first time indicates the rôle that is played by the inorganic constituents of the ingesta and in showing the fundamental importance of these simple substances in the economy, links up the complex activities of the living cell with bodies that whilst suffering no chemical change are the carriers of that electrical energy which is more and more becoming recognised as the universal power.

This enumeration of the factors concerned in the maintenance of a normal nutrition suggests the directions in which we must look when endeavouring to comprehend the real nature of those perversions of the processes comprehended within the function which constitute disease. But it is seldom that a state of malnutrition is ever attributable to one cause only. Even when the primary error is comparatively simple and single the complicated relationships of the human organism are such that a disturbance, however slight at first, is liable so to interfere with the closely correlated functions of the body as to produce effects over a wide range and thus tend to obscure the real origin of the perversion.

MALNUTRITION DUE TO ERRORS IN DIET.

The first and the simplest causes of malnutrition are those connected with a deficiency of aliment leading to a condition of inanition. The pathology of this condition has long been known with tolerable accuracy due to the investigations of Voit. Careful observations have also been made not only upon animals placed under experimental conditions but also upon the several fasting men who have been before the public within recent years. Briefly the sum of these observations shows that there is a steady loss of body weight, after the first day or two the daily loss being fairly regular up to death—if the experiment be pushed so far. The total loss in a vigorous adult has been computed at four-tenths of the body weight but the young die much sooner and quickly succumb to the withdrawal of food. As is well known, the loss affects the different organs and tissues of the body to very different degrees, the heart and organs of the nervous system suffering least, indeed, the proteid nutrition of these structures is maintained at the expense of those of the systemic muscles and possibly of the glandular tissues, all of which with the fat are the first to be used up and suffer the greatest total loss. Investigation of the composition of the excreta shows that there is a steady breaking up of the body proteids, as may be measured by the urea, and that this goes on with a coincident destruction of the fats and to a less extent of the glycogen; when the last of the fats has been used up the amount of urea excreted is much increased since then the tissue proteids are the sole source of the body energy. "The carbon dioxide exhaled from the lungs during starvation continues to be given off in proportion to the weight of the body, to the work done, and in inverse proportion to the temperature of the environment" (Schäfer). At first the temperature of the fasting animal keeps about normal but later, as the metabolism is lessened in amount and the heat-governing centres are damaged from inanition, it falls and death takes place when the thermometer registers about 30° F. below the normal, which is incompatible with the continuance of the necessary protoplasmic interchanges.

In dealing with that form of malnutrition which is directly due to a deficient intake we have to remember that the average amount of food ingested by inhabitants of this country very considerably exceeds the quantity which is absolutely required to maintain metabolic equilibrium. And although the experiments of Chittenden previously alluded to may show that under certain selected conditions of satisfactory surroundings and regular exercise a metabolic equilibrium may be maintained on a diet which amounts but to a third or a half of what the average man eats with at the same time the performance of an average muscular work and the keeping of good bodily vigour it remains a question to be decided how far this reduction would be satisfactory under the ordinary conditions of civilised life. General experience would seem to be against it, and it is still to be shown that those individuals who live on such a restricted diet live longer or healthier or more vigorous lives than those whose diet is that of the ordinary person. So far as my observation goes they do not. Moreover, too, the element of habit requires to be considered, for this is apt to be most important in connexion with many of the circumstances of our being, and in such matters as the amount of food or of sleep that individuals find to be necessary for themselves it is of the greatest moment. At the same time certain general conditions should regulate the quantity of food taken, foremost among which are the age of the individual, or, perhaps one should say the period of life, of growth, maturity, or senility, and the character of the daily life so far as it manifests a lessened, average, or excessive energy. A neglect to observe these circumstances may contribute very actively to the establishment of malnutrition by failing to regulate the supply according to the demand and this not only in the normal state but also in the presence of existing disease where the food is not adapted to the needs and possibilities of the organism.

It is to be remembered also that the measure of malnutrition from insufficient—or assumedly insufficient—nourishment is not altogether to be estimated by the body weight, for there are not a few individuals whose weight is much below the average for their age and height and whose appearance is almost one of emaciation, but whose general well-being, as well as muscular and mental activity and powers of endurance, are quite up to the standard. So long as the individual remains in nitrogenous equilibrium and does

not lose weight he cannot properly be regarded as underfed. Possibly our tables require revision in this respect. But what is more to the present purpose is that the intake of such persons may be by no means deficient and there are those who, feed them how we will, we are unable to add to their weight. On the other hand, that mere weight is not to be taken as a measure of nutrition is obvious, since the very obese are usually but poorly nourished, their nitrogenous tissue being weak and flabby and their capacity for exertion as also for resistance to morbific influences much diminished. That emaciation itself is not the sole index of malnutrition may be also seen by comparing the conditions presented by an advanced case of malignant disease or of certain grave nervous affections with the condition known as anorexia nervosa, when along with the extreme loss of weight the former are marked by muscular debility and general malnutrition in the fullest sense, whilst the last-named state is compatible with considerable muscular power and very often with a restlessness that is quite remarkable. Similarly, an increase in weight is not necessarily to be regarded as a sign of health, for whilst some people whose body weight is above the average owing to an excess of adipose tissue are active and energetic, hampered only by the impediment of bulk, others of like build are dull, lethargic, and quite incapable of exertion.

It is not very often that we are called upon to deal with actual starvation, with an intake, that is, which is obviously and gravely deficient. Those conditions of œsophageal stricture or of gastric disease which mechanically interfere with the necessary ingestion and are commonly due to malignant disease are less conclusive than those due to simple stricture, inasmuch as the morbid process may be responsible for the production of some material which influences prejudicially the metabolism of the tissues and thereby induces wasting apart from that due to deficient intake of nutriment. Whether this be so or not we frequently notice in such cases that the patient goes on, gradually it is true, getting worse, but yet without any very marked difference from day to day, until almost suddenly, without any very particular change in condition, he sinks and dies rapidly, having used up, as it were, the last available material or has ceased to secrete those enzymes without which the material is of no avail. The association of typhus and relapsing fever with famine is well known, as also the greater liability of phthisis in the underfed. Recovery from illness is also more difficult and protracted, and disease when present is likely to take a more serious course in such persons.

If now we turn to a deficiency in special ingredients of the food, too little, that is, of one or more of the requisite alimentary principles, it seems to be pretty clear that very serious states of malnutrition may be induced from this cause. It is generally supposed, and no doubt rightly, that the underfed person is less resistant to the ill-effects of pathogenetic organisms. Perhaps this may be explained in great part by the absence of those protective materials which in a perfectly normal state circulate in the blood current or may be readily developed therein, and among these there is some reason to include the proteids of the blood serum which, as I have said in my last lecture, are probably not destined to the nutrition of the proteid tissues, but which nevertheless depend for their maintenance in the blood on the proteid food.

There is another direction also through which a deficiency of proteid food may make itself felt. The influence of the alimentary principles of this class in stimulating metabolism is clearly recognised in the increased consumption of the adipose tissue on a meat diet, and the method of treating obesity in this manner is well known. They would seem to be a normal stimulus to protoplasmic metabolism, and that from this is to be explained the general impairment of vigour and enfeebled tone which are associated with a dietary which is deficient in proteid constituents. Exactly how this is brought about our present information does not allow us to state. But at least it must be recollected that the all needful ferments, not only those of the digestive secretions but those of the tissues themselves, to the activity of which we have seen reason to believe the manifestations of living tissue are so largely due, depend for their formation upon the nucleo-proteids of the cell, which depend again for their nutrition upon the intake.

In yet another, and possibly closely allied, manner the proteid ingesta appear to exert a very direct influence on nutrition apart from their constructive and fuel value. I have previously referred to the fact that the process of digestion is accompanied with a lymphocytosis and some recent observations by Dr. Galbraith[3] show that in pulmonary tuberculosis this lymphocytosis and also the hæmoglobin percentage are much increased by a raw meat diet. Now both the lymphocytes and the hæmoglobin play important parts in tissue nutrition, the former if in no other way by becoming agents for the transfer of fat from the intestinal epithelium into the commencement of the lacteals and the latter by the share it takes in bringing about the processes of oxidation. But since there is also found to be an increased nitrogen absorption and retention it is suggested that the lymphocytes give rise to some body which "links the nitrogen to the tissue cell."

In infants and very young children, more particularly among those fed upon many of the patent foods, a very distinct failure in nutrition is to be recognised as being due to proteid starvation, and that is in most cases quickly recovered from on an adjustment of the diet and the administration of a larger proportion of nitrogenous aliment. Whether, as is most probable, the proteid deficiency first of all affects the blood-forming tissues, the red marrow and the adenoid structures, cannot, so far as I know, be precisely affirmed, but certain it is that the blood in such children as I am referring to is of a deteriorated character and they exhibit the general features of anæmia, among which listlessness and obvious want of tone and energy are perhaps the most striking. Certain cutaneous rashes are also of frequent occurrence. Although such children are obviously ailing they need not by any means be thin; on the contrary, they are frequently fatter and of heavier weight than the average. But their condition is best expressed by the term "flabby" and the adipose tissues generally are hydræmic, a state that has been called "hydroplasmic obesity." It is clear, therefore, that for various reasons a deficiency of proteid ingesta—and included therein the all-important nucleo-proteids—will prejudicially affect the nutrition of the organism.

It is seldom, if ever, that we meet with a condition of malnutrition which can be attributed to a deficiency of carbohydrate ingesta but in respect to fats the case is different. Here, again, it is in the growing period of life, and particularly in the earliest months, that a lack of fats is the cause of a serious perversion of nutrition. After the conclusive results of the feeding of rickety lion cubs which had been brought up on lean meat there can be no doubt that a deficiency of fat in the dietary of children is the essential cause of rickets. Most probably the condition is intensified by a want of proteids and, of course, by a want of lime salts, but these two constituents of a proper aliment are not nearly so often lacking as fat is in the numerous prepared foods upon which rickety children have almost invariably been brought up. Probably no such complete illustration could be given of the direct relation of meat-nutrition to a defect in the ingesta as is the case of the connexion of rickets with a fat deficiency, for it is so clearly demonstrated by the relief of the morbid state by an improvement in the dietary. In speaking of rickets it must not, of course, be forgotten that the bone changes constitute but a part of the disease, for the muscles, the nervous centres, the mucous membranes, the blood, and, indeed, the tissues generally, exhibit in varying degrees structural imperfections and functional defects. A more particular relationship of deficiency of fat in the food has been thought by some to obtain with certain nervous diseases more particularly as occurring in infancy, or at least that the foundations of the affections were laid then, but of this I have been able to obtain no precise information. A deficiency of fat has also been associated by some with an impaired power of resistance to microbic invasion, particularly of the bacillus tuberculosis. Until recently scurvy has been almost universally regarded as a disease due to deficiency of certain food constituents and by many these were supposed to be the potash salts of citric, malic, and tartaric acid. Recent observations have, however, rendered it very doubtful whether this is really the essential cause of the malady, though it must be confessed that the administration of fresh vegetables and fruit juices which contain these salts goes far to prevent the incidence of the affection and to assist materially in its cure when it is established, though the salts given as such are ineffectual.

Passing now to malnutrition, the result of over-feeding, the question at once arises, At what point can this condition be said to occur? As provocative of disease it certainly

[3] The Practitioner, February, 1905.

cannot be supposed to exist when any excess, however slight, is taken over and above what is exactly required to balance the expenditure of material. Such a view would allow no margin for reserve, the presence of which in the body is a necessity to meet the fluctuating and irregular demands of ordinary living. Although it is notorious that a large number of persons daily consume more food than is physiologically required, even with such overplus as may be regarded as primary or necessary reserve, it is difficult to regard this as over-feeding, especially if a fair amount of muscular exercise be taken, if the weight remains uniform, and there is no evidence of disease. The effects of an excessive diet upon healthy adults living ordinary lives have been studied experimentally by Dr. F. W. Goodbody, Dr. N. D. Bardswell, and Mr. J. E. Chapman[4] and with very interesting results. A careful balance-sheet was drawn up of the ingesta and excreta of each of a series of normal individuals subsisting on an ordinary diet such as they were accustomed to and upon which they maintained good health. When this was obtained the quantity of food was very much increased, in some cases the amount of the alimentary constituents being doubled or nearly so, and another balance-sheet was prepared in the altered circumstances. One striking result was the considerable increase in body weight, notwithstanding that the forced feeding could only be continued for a very few days, since in all cases, though in somewhat varying degree, the change in diet set up a marked disturbance in the general health. The appetite became lost, a sense of weight at the epigastrium was experienced with distension of the abdomen, and diarrhœa set in with colicky pains. The gain in weight was lost in the course of a week after the forced feeding was discontinued, but it was several weeks before the individuals regained their health. The quantity of urine passed on the excessive diet was increased and very much in proportion to the increased intake of fluids and at the same time the specific gravity was much increased. The quantity of nitrogen in the form of urea, uric acid, and ammonia, and the amount of inorganic salts were much in excess of the normal, but the nitrogen in the fæces was not increased, showing that the proteids had been digested and absorbed and excreted by the ordinary channel and not simply passed through the alimentary canal. But this was not the case with the fat which was largely in excess in the stools, offering thus a marked contrast to the proteid intake. A similar inquiry was undertaken by Dr. W. Hale White and Dr. E. I. Spriggs,[5] but in this case the subject was a woman who had neglected her meals under the stress of anxiety and sleeplessness and though 38 years of age only weighed 6 stones 2 pounds. The diet upon which she was placed was nearly three times in amount that of a normal individual and this was perfectly well tolerated without any of the discomforts and symptoms manifested in the previously mentioned cases. She gained weight considerably—13·256 kilogrammes in 56 days—and the analysis of the fæces showed that she retained 96 per cent. of the ingested fat. In comparing the beneficial result of an excessive dietary observed in this case with the less satisfactory consequences which characterised the experiments of Dr. Goodbody and his colleagues it must be noted that the woman started on the feeding from, so to say, a lower nutritive level than did the male subjects who were healthy. That the general condition of the individual on commencing a largely increased intake does affect the character of the result is further illustrated by the observations made by Dr. Goodbody and his colleagues on metabolism in phthisis.[6] Among the conclusions they arrived at were, that "while comparatively large diets were well borne by those much below their weight, they were not so well tolerated by, nor did they give such satisfactory results in, patients up to weight and with arrested disease."

Very definite consequences are likely to ensue from an excessive ingestion of the individual alimentary principles. When this takes the form of a much increased proteid intake there is found to be a corresponding increase in the nitrogenous excreta chiefly in the form of urea and some increase may also occur in the amount of the other products of proteid cleavage. Of these, most attention has been directed to uric acid in consequence of the relationship of this substance to the complex condition known as gout. Since, however, it has become known that this material is an excretion product of nuclein metabolism derived from cellular tissues, especially leucocytes and gland cells, and only partly and in uncertain quantity from the proteid intake, its interest in relation to the food is of less moment. With further knowledge, which is much to be desired, concerning other members of the purin[7] group such as xanthin, hypoxanthin, guanin, &c., as well as of the derivatives of proteid decomposition other than urea, such as creatin, creatinin, the amido-acids, &c., we may hope for a clearer conception of the inter-relations of these bodies and their connexion with morbid states, whether as causes or results. Meanwhile, however, it is certain that no ratio of production exists between urea and uric acid and their formation and consequent excretion in all probability are quite independent. When the excessive proteid ingestion is accompanied by a diminution in the amount of fats and carbohydrates there is a general increase in tissue metabolism as seen by the increased consumption of the body fat. How this is brought about is far from certain.

Although, no doubt, fat makes fat, this is only true to a certain extent, for a very large fat intake is followed by a considerable increase of fat in the stools, in great part in the form of fatty acids, showing that though a splitting has taken place in the alimentary canal the absorption has been deficient. The experiments before referred to on metabolism in phthisis show, however, that even when the temperature of the patients was raised the fat assimilation with a much increased ingestion was very complete, over 96 per cent. being absorbed. The carbohydrate intake, however large, appears to be capable of absorption, and provided an indigestion be not established the greater part is stored as fat. When the excess is taken in the form of sugar, and perhaps also sometimes as carbohydrate, the amount may be more than can be converted into glycogen or fat and is excreted at once as sugar constituting the condition of alimentary glycosuria.

MALNUTRITION DUE TO MALDIGESTION AND MALABSORPTION.

Having thus dealt with the nutritional defects consequent on improprieties in the quantity and quality of the ingesta we have now to consider such forms of malnutrition as may be referred to disturbances of those processes which are concerned with dealing with the food, with, in fact, maldigestion. I need do no more on this occasion than refer for one moment to the far too frequent misapplication of the terms indigestion or dyspepsia, with, as I believe, the effect of adding thereby to the confusion which already attends a difficult subject. Used in reference to this or that group of symptoms which thus tend to be raised to the position of separate diseases it is too often forgotten that such symptoms are but the expression of some flaw or flaws in the performance of one or other phase of the entire process of digestion, or it may be of the subsequent stages in the progress of the ingesta, to the recognition of which every effort of the clinical observer should be directed and without which treatment becomes wholly empirical and fanciful.

The various factors concerned in the carrying out of the digestive function offer almost innumerable opportunities for its mal-performance. Thus, apart from the structural integrity of the organs concerned, which, of course, is a fundamental requisite, there must be a sufficiency in the quantity and the composition of the several secretions, together with a proper tonicity and activity of the gastro-intestinal musculature, whereby the different stages of the digestive act are enabled to take place without either undue delay or undue haste. As a most necessary preliminary also must be an effective mastication for which sound teeth are essential. Now the motor and secretory phases of digestion are directly controlled by the nervous system, the healthy condition of which becomes another requisite. That the chemical stages of digestion should be completely carried out in the stomach and intestines it is needful that the digestive products so soon as formed should be removed lest their accumulation arrest further action of the ferments, hence the ready absorption of these digesta becomes a necessity. For the

[4] Journal of Physiology, vol. xxviii., p. 257, 1902.
[5] Ibid., vol. xxvi., 1901, and Guy's Hospital Reports, 1902.
[6] Transactions of the Royal Medical and Chirurgical Society, vol. lxxxiv., 1902.

[7] Purin bodies are those containing a nucleus C_3N_4 termed by E Fischer "purin." They are closely connected with the nucleins from which in the body they are mainly derived. The best known of the group is uric acid.

efficient occurrence of this, as indeed for a normal motility and secretory performance, a proper blood-supply is postulated, which introduces another source of possible defect. Since the extent and character of the chemical changes in the alimentary tract are so largely conditioned by the nature of the food that is present, the composition and quantity of the secretions varying with the digestive requirements of the ailment, it is impossible to exclude the ingesta in this purview of the whole process, apart from any prejudicial effect they may have in their indigestible or even toxic qualities. Concerning the mutual effect of the coincident digestion of numerous alimentary principles at different stages of the process we know but little, though it must be of importance in bringing about the final result, whether this be normal or the reverse. Pawlow has shown in some cases that a beneficial influence is exerted by the presence of certain ingredients of the food upon the digestion of others, but it is equally sure that a harmful influence is exerted in others. The richer quality of the gastric juice which is secreted when bread is mixed with the meat and the inhibitory effect of fat on proteid digestion are comparatively simple illustrations of this statement. The progressive interdependence of the successive phases of digestion has already been dwelt upon, but that the interference with one stage is hence not only harmful in itself but further harmful in the interference with subsequent stages may again be emphasised. Nor does this complete the category of opportunities for maldigestion to occur. We know very little about the bacterial action on the intestinal contents but sufficient to show that some of their action is beneficial if not absolutely necessary, whilst on the other hand a large mass of evidence indicates that many conditions of intestinal indigestion are due to micro-organisms. Lastly, there is to be reckoned with the excretory function of the gastro-intestinal mucosa. That various substances may be excreted from the blood into the alimentary canal, urea, morphine, &c., is known but to what extent this occurs in health, if it do so at all, or what the effect may be, we do not know, but it is at least a possible if not a probable source of digestive disturbance. In such a complexity of conditions it is hard to trace the primary fault but it should be accomplished if we are to arrive at the real nature of any case of indigestion or of a malnutrition which is referable to digestive disturbance. Undoubtedly the simplest, as they are the most obvious, cases in which an error in digestion is responsible for malnutrition are to be found in those patients who are suffering from an exclusion of one or other of the digestive secretions from the alimentary canal. Such a condition occurs in those diffuse carcinomatous infiltrations of the stomach with destruction of the glands, or by an occlusion of the pancreatic duct preventing the juice reaching the duodenum. The emaciation, enfeeblement, and general malnutrition in such cases are notorious, more particularly in the pancreatic affection; and when the obstruction in the duct is non-malignant in nature the result is plainly due to the grave disturbance in the digestive process without the added harmful influence that characterises malignancy.

Of the effect of the absence of individual constituents of the digestive juices we know but very little. The condition within this category most familiar to us is the deficiency of hydrochloric acid secretion in the stomach with the marked amelioration of the resulting dyspepsia that follows the artificial administration of the acid. But in this connexion it may be observed that defects in gastric digestion are far less likely to affect the general nutrition than are perversions of the processes that should take place in the intestine, for these are the most important in relation to the digestion of the food and appear to be able to compensate to a very considerable extent for deficiencies higher up in the canal. It is true that gastric indigestion is responsible for many symptoms, both local and remote, but apart from a malignant causation it is compatible with a very fair standard of general well-being so far as that may be estimated by body-weight and by bodily and mental activity.

Imperfections in the motor activities of the digestive process may lead to malnutrition if sufficiently long-continued but only indirectly. Thus a constant diarrhœa or vomiting of nervous origin, and apart from any serious structural defect prejudicially affecting the chemical changes in the canal, may cause considerable wasting and general functional impairment, but this effect is clearly due to the too rapid ejection from the canal of the ingesta without their having the opportunity of being either fully digested or absorbed and brings the result akin to that which follows from an insufficient administration of nutriment. When the error in gastro-intestinal motility is of the opposite character and the propulsion of the gastric contents into the duodenum is unduly delayed or the waste residue in the colon is unduly retained the materials are apt to undergo abnormal decompositions and by the production of toxic substances interfere with the health of the individual. But here, again, it is less a condition of malnutrition that commonly becomes established but rather a number of symptoms of a more or less discomforting character with which the general nutrition and bodily ability may be well maintained. Such lesions of the intestinal mucosa or of the lacteal vessels and lymphatic glands which drain that membrane as cause an extensive structural change are likely to lead to serious malnutrition for obvious reasons. A widespread denudation of the epithelium of the mucous surface of the small intestine and atrophy of the membrane were long ago described by Nothnagel as the commonest cause of marasmus of infancy and early childhood and the persistent wasting with loss of energy sometimes seen after typhoid fever is attributable to a similar cause.

MALNUTRITION DUE TO PERVERTED METABOLISM.

As might be expected, the more profound disturbances of nutrition, and those most clinically interesting and pathologically obscure, are those connected with perversion of the synthetic stages of metabolism. It is here, also, that is to be sought the real explanation of those conditions which are primarily to be referred to a faulty dietary or a maldigestion. For however important defects in the several factors of nutrition as just enumerated may be in the production of malnutrition they can seldom be regarded as the essential cause. If for no further reason it might be pointed out that deficiencies in quantity or quality of the food-supply or imperfections in the digestion of the food may take place to a considerable extent and yet be unaccompanied by any such change in bodily condition as can be termed malnutrition, whilst, on the other hand, very grave malnutrition can occur with no apparent perversion of either the food-supply or of its digestion or absorption, as witness the cases of diabetes mellitus, the malignant cachexia when the new growth is unconnected with the alimentary tract, or extreme obesity. It is not until the essential factor of nutrition is involved that any serious deterioration in the function can really be said to occur. Now this essential factor we have seen to be ferment activity and the actual causation of malnutrition is to be found in such circumstances as prejudicially modify enzyme action.

I pointed out in my last lecture how dependent these bodies are for their activity and, what is even more important, the particular kind of their activity upon the nature of their surroundings. It is only within a comparatively narrow range of temperature that they will act, each having its own optimum point and all being destroyed at or about 100° C., though in a perfectly dry heat capable of maintaining their power to a much higher temperature. It is not, however, that such temperatures as are met with in the living body affect to any appreciable extent the enzyme action and can scarcely be considered as in any way responsible for defective action and consequent malnutrition.

Another condition upon which the very production of the enzyme or its precursor appears to depend in many cases is a due supply to the cell protoplasm of certain ingredients chiefly nitrogenous in character. Long ago Schiff showed that the secretion of pepsin depended on the ingestion into the stomach or injection into the blood of such material as solutions of peptones, or gelatin, or meat extracts, or even of dextrin. The relation of secretin to trypsinogen formation is an example of this dependence. Though I am not aware of any work that could show a defective ferment action and an impaired nutrition as being due to such a cause as this, it would reasonably seem to be a possibility that should be borne in mind, especially as these "stimulants to enzyme secretion," as they may be called, are probably very numerous and differ to some extent for each ferment.

I pointed out in my last lecture also the very important discovery of Croft Hill that the direction of intracellular ferment action, whether synthetic or anabolic, or analytic or katabolic, was in great measure conditioned by the degree of concentration of the products respectively of anabolism and katabolism, and it is easy to see with what facility this degree of concentration may be affected by the inhibition or exudation of ever so

little water with consequent profound alteration in the activity of the protoplasm. Is it not at this point we see the beginnings of, on the one hand, those degenerative changes which consisting as they do of a degradation in the chemical composition of the tissues with impairment of function are among the most striking illustrations of malnutrition? On the other hand, when the degree of concentration of the cell is increased and the anabolic changes are in the ascendant are we not at the threshold of those constructive changes which result in the multiplication of the cell elements and the formation of new tissue? If, as is reasonably supposed, the living activities of the cell are the expression of series of ferment actions occurring in stages how infinite almost seem the possibilities of their disturbance by the nature of their surroundings. Inasmuch also as it is certain that many of these ferment actions are the result not of one enzyme alone but of combinations of them and this under conditions of which we know extremely little, we can understand yet another direction in which perverted metabolism may originate.

In endeavouring to form any rational conception of the intimate pathogeny of malnutrition let me enumerate the several factors concerned so far as our present knowledge enables us to express them. The pabulum as presented to the living protoplasm is both extrinsic and intrinsic in source. Ingested as proteids, fats, carbohydrates, salts, and water, the first named, which is indispensable for the maintenance of the bioplasm, is wholly derived from outside and is not synthesised in the animal body. The fuel foods, on the other hand, are not only taken as such but are in some degree interconvertible and are also directly or indirectly formed from residues of proteid cleavage. Thus, although the evidence in favour of the formation of sugar from fat is very inconclusive, that the reverse takes place to a large extent is undoubted and a hexose body which may become fat is in all probability one outcome of proteid disintegration. Secondly, these organic food-stuffs, more especially, but not solely, the non-nitrogenous, are alternately in a stored or fixed and in a circulating or soluble condition, being thus altered by the tissue enzymes, and are not straightway carried from their site of absorption at the alimentary mucosa to their ultimate destination and excretion. And, thirdly, on grounds that are at least very probable, the nitrogenous pabulum is regarded as being presented for assimilation in the form of comparatively simple substances, such as the amido-fatty acids which are synthesised by the ferments of the cell into the complex proteid molecules, whilst the fats and sugars are presented for combustion in forms that differ but little from those in which they are ingested. Then in addition to these characteristics of the pabulum the tissue ferments have to be remembered, with their remarkable activities which are liable to modification by the slightest differences in the composition and concentration of their surroundings and in some cases actually depend for their formation upon the presence of substances produced elsewhere in the body. If, I say, we can realise this aspect of the problem, these conditions which constitute the essentials of nutrition, we can well imagine how easily these conditions are open to disturbance, and the pabulum to be misapplied which is what is really meant by malnutrition. Nor does this exhaust the circumstances which have to be considered. So far I have mentioned those which concern the nutriment, but the receptivity of the living molecule is an equally, perhaps more, important factor, though here we enter upon more debateable ground. Agreeably to Ehrlich's view we assume that the requisite food materials become connected with receptive atom groups of the living molecule which are developed both in quantity and quality according to the nature of the presented pabulum. To effect the necessary union between food and bioplasm intermediary linking bodies may have to be formed. However provisional such views are, and however crudely they may express the real facts of the case, they nevertheless do assist us in forming a mental picture of what goes on, fully accepting that it is hypothetical and subject to modification and correction. For my present purpose, however, these suggestions, consistent as they are in great measure with the results of experiments, open up a further range of possibilities by which nutrition may be perverted, and my aim in these remarks is to submit for your acceptance the view that it is in this region—among these ultimate conditions—that we are to find the real cause of the various forms of malnutrition which clinically engage our attention. It is here that the disturbing influences which we collectively speak of as poisons exercise their ill effects by assisting the action or preventing the formation of the necessary ferments and so injuriously modifying the nutriment as it is presented to the cell, or preventing its proper reception by the living molecule, or even by interfering with that trophic control manifested by the nervous system whereby the nutritive equilibrium of the cell is governed. How remote really are many of those antecedent and associated conditions which too readily I fear we are apt to speak of as causes of the various forms of malnutrition which we meet with. How numerous also are these states, quite different from each other, to which we ascribe the causation of one single morbid change. And, too, how often at variance are these so-called causes. Many are the thin persons that no feeding will make fat, many are the obese that no restrictions will make thin. Look, too, at the varied conditions associated with diabetes and the equally numerous ones that establish what we call gout. Surely it must be beyond those gross states so commonly called causes that we must look for the real explanation and the theoretical considerations I have outlined appear to me to indicate the direction in which we must search.

So far as our knowledge at present goes the varieties of general malnutrition appear to fall into groups corresponding to a misdirection of the several kinds of alimentary principles which are chiefly to be recognised by the nature of the excreta. Thus we meet with perversions of metabolism indicated by an excessive elimination of uric acid, by glycosuria, and by the over-production of fat, forms of malnutrition which are frequently related in occurrence, whether by coexistence or by family association. They are all, be it observed, exaggerated conditions of what in a much lesser degree are normal states and appear to be capable of being induced to a great extent by artificial means such as the administration of reagents which from their ill-effects we denominate poisons. Very numerous are the ways in which proteid metabolism may be interfered with leading to more or less serious alterations in the general nutrition. The determining cause of the disturbance may arise either within or without the body. Among these may be mentioned the influence exerted by a circulation in the blood of an excess of dextrose such as occurs in diabetes mellitus. It was found by Dr. James Scott[8] that when large quantities of dextrose are subcutaneously injected into a dog, thus eliminating the action of the liver on this substance and so permitting its being dealt with by the tissues generally, the proteid metabolism was much increased. Although in this case the poison—viz., dextrose—which either of itself or by giving rise to some acid derivative, was introduced from without, there is no reason to suppose but that the same result would occur were the excess of dextrose circulating in the blood derived from a malmetabolism of the carbohydrate ingesta. This is undoubtedly the case in diabetes, more especially in the later stages when various acids, which diminish the necessary alkalinity of the tissues, are formed, and the wasting of the proteid tissues is particularly well marked. In fever also, induced by the toxins of the acute infections, a largely increased proteid katabolism occurs, though by no means of the same character in all cases. Thus the urea is often considerably in excess, though this is not invariable. Similar differences occur in respect to uric acid, kreatine, and the purin bodies.

As illustrating the perversion of sugar metabolism by a poison mention may be made of the glycosuria which is caused by the administration of phloridzin in connexion with which Dr. F. W. Pavy and Dr. Brodie have shown that under the influence of this reagent the renal cells form sugar comparable to the production of lactose by the mammary gland.[9] The metabolism of fat may be experimentally interfered with by toxic doses of such substances as arsenic and phosphorus. It has been proved by Rosenfeld that the interference which results in the excessive deposition of fat in the cells of the liver and kidneys, in the muscles and walls of the blood-vessels, is with the transference of fat from its usual sites of storage and is not an actual degeneration of the nitrogenous materials of the tissues as formerly supposed.

THE RESULTS OF A DEFICIENT SUPPLY OF OXYGEN.

Having regard to the important function performed by oxygen in tissue metabolism, both synthetic and analytic, the

[8] Journal of Physiology, vol. xxviii., p. 107.
[9] Journal of Physiology, vol. xxix.

effect of a diminished supply is likely to induce a serious disturbance of nutrition. One effect of this is to be seen in the character of the excreta, especially the urine, which are found to contain unusual substances, for the most part the products of imperfect tissue metabolism. Thus lactic acid and dextrose, which ordinarily are oxidised directly, or indirectly as fat, into carbon dioxide and water, are to be met with in such circumstances in the urine. Though the supply of oxygen may be adequate its actual employment by the living cells may be interfered with and such appears to be the effect of certain poisons, such as the cyanides. May it not be that this is brought about by the inhibitory influence exerted by these substances upon the oxidising ferments, just as it is known that the katalytic action of spongy platinum may be arrested by similar means. I would especially draw attention to these results of deficient tissue oxidation in the giving rise to acid products and to dextrose as among the consequences of muscular activity under anaerobic conditions and to associate them with the later stages of diabetes mellitus which are characterised by acid auto-intoxication and by that singular symptom known as air-hunger which with no lack of oxygen supply expresses an incapacity of the tissues to make use of it. But whilst a deficiency of oxygen thus prejudicially affects the nutrition of the organism from its katabolic side by the toxic bodies which imperfect oxidation may give rise to, its influence on the synthetic side may be equally serious by interfering with the restitution of those substances which by their oxidation and hydrolysis liberate the energy that is converted into muscular and nerve force.

A deficiency of oxygen may be tolerated for a time under certain conditions. Long ago Hermann showed that a frog's muscle could continue to contract for a period in an atmosphere free from this gas; the requisite element may in such circumstances be obtainable by the action of reducing agents—enzymes—from some of the constituent compounds of the tissues, or the energy liberated may be the result of chemical decompositions in which free oxygen takes no part, as in hydrolysis. Nor does it appear that the detrimental effects of a deficiency of oxygen supply to living matter are solely represented by the nature of the chemical products of metabolism and by the impaired function, for certain structural (morphological) characters have also been observed in the bioplasm placed under such conditions. Here, again, it is to Loeb's [10] profoundly scientific acumen and experimental capability that we owe what is known on this subject. Whilst pursuing his inquiries into the effects of external agents upon the segmentation of the egg in some lower forms of life he found that in the absence of oxygen the cell-cleavage was arrested and that those cells already formed became fused together. This does not imply a death of the cells, which resume their segmentation when oxygen is again supplied. Similarly a slowing or complete cessation of contraction takes place in the excised heart when placed in surroundings from which oxygen is excluded. Theorising on these results Loeb regards them as indicating that the failure of the living tissue to manifest its normal activities when deprived of oxygen is dependent on molecular changes, as shown in the cell fusion, which interfere with the due conversion of the chemical energy which is liberated into the physiological activities of muscles, glands, or nerve cells. For, as he says, "the conversion of chemical into the physiological function depends upon definite molecular conditions in the cells (state of matter, osmotic pressure, surface tension, &c.)."

ATROPHY, DEGENERATION, AND DEATH.

The most marked of the general structural manifestations of impaired nutrition are probably those which we denominate degenerations, as the consequent functional deterioration is represented by senility and finally by death. These conditions present themselves to us at all stages of life and are the accompaniment of all diseases, of which, indeed, they constitute the physical basis. If now we inquire what is really meant by atrophy and degeneration they are seen to be terms that represent a deficiency of tissue or a formation of material chemically different from the normal and functionally defective. Such change in the actual composition of the body materials implies that the nutritional capacity of the tissues is perverted, the ability of the cell protoplasm to maintain its structural integrity is altered. By such conceptions as I have submitted to you of the factors which make up the nutritional capacity we are enabled, as it appears to me, to discuss more clearly—though still without ultimate explanation, I admit—at least the ways in which the morbid result is brought about. We recognise that these changes, or at least some of them, ensue after maturity and underlie, as I have said, senility and ultimately lead to death. But many of them may set in earlier in life, or may even be manifest from birth. Whilst we accept the former as the normal order of events, the others we attribute to a deficient vitality which may be inherited or that has been acquired, such premature nutritional failures being forms of what Sir William Gowers has so happily termed "abiotrophy." Experience has led us to connect those degenerations which develop before the normal senile change with the action of poisons, whether these be of so simple a character as arsenic, lead, or phosphorus, or even as alcohol, or those possessed of more complex nature like the toxins of disease, such as those of diphtheria and syphilis. But if we are to try to form any idea of what the intimate nature of these perverted processes really are we must, I think, be driven to seek for the comprehension of them in a misdirection of that ferment action which I have suggested to you as the agency by which tissue construction and destruction, the chemical changes of synthesis and katabolism, are brought about. At the stage of ferment action we reach that point at which the most diverse gross conditions which we speak of as causes bring about a similar result. If by any means the production of the enzymes be arrested, if only one in a series, the changes, whether anabolic or katabolic, will be interfered with. Under the exceedingly delicate and easily disturbed conditions in which these complex processes of vital chemistry must occur, that this or that enzyme is not produced makes no great demand upon our acceptance. When, too, we recollect that the degree of activity and, owing to their powers of reversibility, the direction of their action are subordinate to such fluctuating circumstances as a slightly greater or less degree of concentration of the surrounding medium—the presence of a little more or a little less water—it is not difficult to understand how these mysterious agents by determining a katabolism out of proportion to what occurs within the range of normal, thus bring about an atrophy and degeneration, as an excess in the other direction might induce an over-formation of tissue, a hypertrophy or cell multiplication. If, as I say, we are to suppose that the effect of poisons is thus to influence ferment action, are we not equally to regard the normal changes of senility as attributable to the same? Those alterations in tissue composition which we call degenerations constitute the death of the tissue elements involved, which differs only in degree from that of the body as a whole. Throughout life existence at any moment represents the resultant of anabolic and katabolic action, the causal ferments being ever at work; from lack of those by which synthesis is effected or by such conditions in the surroundings as arrest or diminish the activity of those by which construction is maintained, the destructive phases of nutrition become paramount and death local, and finally general, ensues. If nutrition and life be but the expression of the effects of enzymes, equally death is a correlative manifestation. Will it ever be possible fundamentally to influence either? To propound such a question as this to a scientific audience would until quite recently have even been regarded as unseemly and most assuredly no form of answer could have been attempted; the elixir of life had long ago been consigned to the limbo of the unknowable. But the nature of life at its origin—at the starting point of its nutrition—is a problem that I have already mentioned engaged the attention of Loeb[11] in connexion with his researches into the mechanics of life phenomena. Briefly to refer to some of his results is to show that a considerable measure of influence may be exerted in maintaining life. Starting from the well-known phenomena that the unfertilised eggs of many of the lower forms of life, and even also of some mammals, undergo a certain degree of segmentation, it is found that it does not proceed beyond the formation of a mere heap of cells which is far removed from being an embryo. The initial step in development is therefore taken before fertilisation and what the sperm cell does is not to start the process but to accelerate and develop it. The male element plays, therefore, the part of a katalyser, which has been defined as a body which accelerates chemical or physical processes which would occur

[10] See Studies in General Physiology, 1905, part i., p. 370.

[11] Loc. cit., Part II.

without it. Among such bodies, it will be remembered, are to be ranked the ferments. But this is not all. Loeb found that the unfertilised ova that had proceeded to a certain degree of segmentation might by a careful addition of certain salts to the sea water in which they were situated develop a further segmentation and ultimately proceed to the formation of a perfect embryo, such as would result from impregnation and this without the spermatozoon—a veritable parthenogenesis. Differences in the time occupied alone seemed to distinguish this artificial from the natural course. As I have before said, the effects of these simple saline solutions, whether in favouring segmentation or in arresting it, he attributed to ionic action, and whether the spermatozoon conveys to the segmenting ovum a ferment or ferments it is to the ions which it carries that he ascribes its effects. Whilst not claiming that these experiments disclose the origin of life they at least show that, given the living ovum, its future development may be made to depend on the artificial adjustment of its environment. But the point is that without such artificial influence or without impregnation the mature ovum will die; fertilisation therefore, whether natural or artificial, prolongs its life. If, then, it is possible by the application of certain electrolytes to avert from a living ovum what may be termed its natural death, similarly to avert the degeneration and death of the tissue cells of higher organisms may be looked upon no longer as a hopeless quest.

GENERAL CYSTIC DISEASE OF THE KIDNEYS IN BROTHER AND SISTER; NEPHRECTOMY.

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GENERAL cystic disease of the kidney in the adult is probably less rare than we suppose. The following two cases, however, are worthy of publication, partly because of the fact that the patients were brother and sister, partly because of the difficulty we still have in recognising the disease, and partly because of the value it may be to others in the treatment of similar cases in the future.

CASE 1.—The patient, a female, aged 38 years, single, a district nurse, was admitted to the General Hospital, Birmingham, on Sept. 1st, 1901, complaining of abdominal pain and frequency of micturition. There was no evidence of tuberculosis or syphilis in the family history. In 1893 the patient was seized with severe pain in the left loin which lasted a few days. The pain was accompanied by frequency of micturition, the passage of dark muddy urine, and of three small urinary calculi, the largest of which was of the size of half a hazel nut. During the last five years she had been subject to intense attacks of migraine which lasted one or two days and completely incapacitated her from work. These attacks occurred at first during menstruation only but latterly they had occurred several times in the month. For the last three years she had, for economical reasons, lived on almost a starvation diet and a few months ago she experienced a very keen domestic disappointment. In these circumstances she rapidly lost weight and suffered more frequently from headaches. It was whilst in this lowered physical condition that the present attack supervened. About a month prior to admission to hospital under the care of Mr. H. G. Barling she began to suffer from frequency of micturition. A week before she was seized with acute cutting pain in the left loin which radiated down the left leg. The pain remained agonising for two days and then somewhat abated. The frequency of micturition became intensified during the attack of pain.

On examination a large mass was found projecting from the left costal margin and occupying part of the left hypochondriac, left lumbar, epigastric, and umbilical regions. Its lower end reached as low as the level of the anterior superior iliac spine and anteriorly to within two inches of the umbilicus. The mass measured nine and a half inches in length and five and a half inches in breadth. Its surface was very irregular; its shape was reniform; though generally giving the impression of a firm, solid mass, there were distinct areas of fluctuation scattered about its surface. It was moderately moveable and could be projected backwards and made to bulge in the loin. It moved slightly with respiration and was somewhat tender on manipulation. On percussion the descending colon appeared to be in front of the tumour. The right kidney could be readily palpated and appeared to be about twice its normal size.

The urine on Sept. 22nd, 1901, had the following characters. Quantity per diem, 24 ounces; specific gravity, 1026; reaction, acid; there was a faint haze of albumin. Microscopically it showed a few red blood corpuscles but no pus cells or tube casts. On the 26th: quantity of urine per diem, 48 ounces; specific gravity, 1015; reaction alkaline; a faint haze of albumin. Microscopically there were triple phosphate and oxalate of lime crystals in scant numbers; no blood cells, pus cells, or tube casts were present. The blood gave a leucocyte count of 8000 per cubic millimetre and films that were characteristic of a mild form of secondary anæmia. The liver was not enlarged. There was no obvious cardiac hypertrophy. The aortic second sound was slightly accentuated, the arterial tension was normal, and there was no vascular sclerosis. There was no œdema of the feet or legs and a careful vaginal bimanual and rectal bimanual examination revealed nothing abnormal in the pelvis. The bowels were regular. In considering the diagnosis it was felt that the result of the vaginal and rectal examination quite excluded the uterus and ovaries as a possible source of origin of the mass and that the blood examination practically dismissed the spleen. We were thus universally led by the shape, position, and associated symptoms of the tumour to regard it as of renal origin. Cystic degeneration was mentioned by virtue of the irregularity of outline and apparently bilateral enlargement, but the prevailing opinion was that it was either a hydronephrosis or a pyonephrosis arising probably from a calculus. The history of previous calculi and the absence of tubercle in the family tended to confirm this view. The normal leucocyte count, temperature, and pulse-rate were points against its being a pyonephrosis. Mr. Barling himself regarded the case as one of hydronephrosis.

Operation was performed on Oct. 7th, 1901. The usual oblique lumbar incision was made. The tumour was found to be an enormously enlarged kidney in a state of advanced cystic degeneration. On aspirating some of the fluid it was found to be of a dirty amber colour suggestive of urine containing pus. This fact, together with the advanced stage of degeneration, induced Mr. Barling to perform nephrectomy. The operation was successfully completed without wounding the peritoneum or damaging the capsule of the tumour. The artery, vein, and ureter of the kidney were ligatured separately by catgut, a large drainage-tube was inserted, and the wound was stitched up. The patient left the table in a good condition without manifesting any marked evidence of shock. The fluid drawn off from several of the larger cysts during operation contained urea.

Pathological appearances.—The kidney removed was a magnificent specimen of general cystic disease, weighing 2 pounds 14 ounces (1300 grammes) and measuring in length nine inches (22·5 centimetres), in breadth five inches (12·5 centimetres), and in thickness three and a half inches (7·75 centimetres). The kidney was studded on the surface with thin-walled cysts varying in size from that of a pea to that of a Jaffa orange. So thin were the walls of some of the cysts and so large in size that on holding the organ up to the light it was possible to see from one side of the kidney to the other. The larger cysts showed evidence of multilocular development. The capsule of the kidney was preserved intact and was purposely stripped from one-half of the tumour in order to show that the cysts were in the kidney tissue and not merely subcapsular. At various points of the surface the capsule presented thickened cicatricial areas, due probably to the rupturing of cysts and subsequent inflammatory reaction. The contents of the cysts show all gradations from clear, serous-looking fluid to dark brown gelatinous substance. The ureter and pelvis of the kidney showed a moderate degree of thickening. There were, however, no dilatation, no evidence of calculi, and no congenital abnormality visible to the naked eye. The renal artery and vein were considerably hypertrophied.

Microscopical sections of the kidney showed that the cysts

were for the most part lined with a single layer of epithelium which varied from simple squamous to columnar cells, the greater number being lined by a low cubical type of cell. A few of the cysts were entirely devoid of epithelial lining. Outside the epithelial lining was a more or less condensed part of the interstitial connective tissue of the kidney. The contents of each cyst were generally homogeneous, staining a brilliant yellow by van Gieson's stain. A few of the cysts contained catarrhal cells and polynuclear leucocytes scattered amongst the homogeneous substance. There appeared to be every gradation in size from a healthy kidney tubule to the largest cysts and there were large numbers of what resembled normal and slightly dilated tubules which contained a homogeneous substance identical with that found in the larger cysts. Many of the kidney tubules showed catarrhal changes similar in all respects to those seen in interstitial nephritis. There were, however, large tracts of kidney tissue situated between adjacent cysts in which the tubules appeared to be almost normal and, on the other hand, there were similar tracts of loose fibrous tissue in which kidney tubules were quite absent. One of the most striking changes in the kidney tissue was the widespread destruction of Malpighian bodies. This appeared to have resulted from a process of thrombosis beginning in either the efferent or afferent vessels which was followed by round-celled infiltration. Finally, the body probably shrivelled and was replaced by a knot of fibrous tissue arranged in a concentric manner. The interstitial tissue of the kidney was more or less increased everywhere and there were large areas of round-celled infiltration indicative of inflammatory reaction. The walls of the blood vessels of the kidney were enormously hypertrophied.

After-history.—The wound healed by primary union and the convalescence was uninterrupted. On examining the abdomen on Oct. 12th, five days after the operation, it was found that the right kidney had rapidly increased in size and could now be felt to be irregular and of firm consistency. The daily amount of urine passed began to increase a few days after operation and the urine maintained a good specific gravity. Towards the end of the patient's sojourn in hospital the amount of urine diminished until it reached a fair average standard. The patient left hospital on Nov. 2nd with a perfectly sound wound and one kidney enlarged to about four times the normal size, presenting palpable irregularities, due, no doubt, to general cystic disease. This kidney, however, was performing its excretory function with creditable adequacy. On her dismissal from hospital she was advised to take a diet and to live a life similar to those suitable for a person suffering from interstitial nephritis. Most of us, however, including Mr. Barling, took a very gloomy view of her expectation of life which we put down at something like 12 months. The after-history, therefore, is one of considerable interest. For 12 months she remained under the care of Dr. T. M. Tibbetts of Cradley, for whom she nursed. Writing to one of us on Sept. 6th, 1903, Dr. Tibbetts says of her: "For some months after her operation she was, as would be expected, weaker and paler than usual and there was a certain flabbiness and muddiness of complexion with puffing beneath the eyes suggestive of renal trouble, but her strength gradually returned and her features have reached almost the original standard except that her colour is not quite so good as formerly. She has been nursing cases for some months now and has never complained to me of anything unusual in the urinary functions and she has not had an attack of migraine since her operation." During the last month the patient has gone to take a permanent post as matron of a residential home. One of us has kept in communication with this patient during the whole of her stay there and has received samples of her urine from time to time.

On Sept. 12th the patient reported herself as feeling perfectly well and able to perform her duties without the slightest discomfort. The urine at this time had the following characters: colour, pale straw; reaction, slightly alkaline; specific gravity, 1010; amount, 80 ounces per diem; albumin present, 0·75 per cent.; urea, 1·2 per cent.; deposit, very small on standing, consisting of pus cells and epithelial cells, no crystals, tube casts, or blood cells being present. On Oct. 31st a 24 hours' specimen was examined with the following result: colour, of a hazy straw; reaction, neutral; volume, 3800 cubic centimetres; specific gravity, 1010; albumin, 0·75 per cent.; urea, 26 grammes; uric acid, five grammes; no creatinin; no hippuric acid. Microscopically there were pus cells in considerable quantities; red blood corpuscles in scant numbers; epithelial cells, round, cubical, and squamous; and uric acid crystals in scant numbers.

On Jan. 22nd, 1904, the patient, being in the Midlands, consulted one of us just to report herself. She looked robust and well, having put on about two stones in weight since her operation. She was slightly anæmic and had a little palpitation after going upstairs. Since her operation, two years and four months ago, she had experienced three mild headaches, each lasting one day only. Her feet occasionally became swollen at night time but there was no œdema of the legs or ankles at the time of consultation. Her heart was apparently a little hypertrophied, the apex beat being best felt in the nipple line in the fifth interspace, the upper part of the left margin reaching as high as the second left cartilage. The aortic second sound was distinctly accentuated and the arterial tension appeared to be increased but there was little or no arterial sclerosis. The ocular fundi were normal. The patient expressed herself as feeling better than she had done for five or six years. She had never had any pain in the right kidney which had increased to a length of seven inches and a breadth of three and a half inches. It was distinctly moveable, reaching as low as the tip of the iliac crests in the erect posture. It was irregular in outline and quite free from tenderness. The patient was performing her duties with ease and comfort. As the kidney was so moveable she was advised to get an abdominal belt.

On Feb. 5th the whole of the urine passed in 24 hours was obtained and carefully examined with the following result:—

Analysis of Urine.

Volume, 3100 cubic centimetres; specific gravity, 1005; reaction, neutral; sediment, pus. Organic solids, 1·12 per cent.; inorganic solids, 0·54 per cent.; total solids, 1·66 per cent.; water, 98·34 per cent.

	Per cent.	
Albumin and globulin	0·06	(derived from the pus).
Urea	0·43	
Uric acid	0·0025	
Hippuric acid	0·0157	
Creatinin	0·0043	
Phenol	Absent.	
Chlorine	0·107	
SO_3 (inorganic)	0·0380	Total SO_3 = 0·0419 per cent.
SO_3 (ethereal)	0·0039	
Phosphoric anhydride	0·11	

Cammidge's pancreatic reaction was tested upon this urine with a negative result; in both A and B reactions no crystals were found.

On Sept. 6th, 1904, the patient wrote to say that she had for three days had a good deal of pain in her right side, accompanied by hæmaturia. She further complained of dimness of sight in the right eye. A specimen of urine presented the following characters: colour, dark red, obviously from blood; specific gravity, 1012; reaction, alkaline; albumin, 2 per cent.; urea, 2·75 per cent.; and quantity of urine per diem, 80 ounces (2240 cubic centimetres. The deposit contained red blood corpuscles in large numbers, pus cells in large numbers, epithelial cells (cubical and squamous), and triple phosphates. Tube casts were not present. With rest the blood and pain disappeared within a day or two but on Sept. 18th the hæmaturia again returned in greater quantity, when she consulted Dr. Bruce C. Kelly of Wells, who kindly furnished us with the following report on Oct. 30th: "There is much blood in the urine. The right kidney is nine inches long, four inches broad, and three inches thick. The quantity of urine passed per day averages 80 ounces or more. A fortnight's rest in bed caused the blood to disappear from the urine. There is considerable cardiac hypertrophy, the apex being rather more than an inch outside the nipple line. The aortic second is accentuated and the arterial tension is high. There is no albuminuric retinitis but there is swelling and woolliness of both discs in which the vessels are lost."

On Nov. 21st the patient wrote as follows: "I have not had any of my old attacks of sick headache since I saw you in January. Recently, however, I occasionally suffer from slight pain at the back of my head, which comes suddenly and as suddenly disappears. I do not suffer from palpitation now unless I hurry very much. In the months of April, May, and June of this year my feet and legs swelled a good deal, but I attributed that to the fact that I was compelled to stand for long hours; they are better now that I can rest

more. The pain in my back and side which I had two months ago has disappeared since Dr. Kelly made me rest in bed for a fortnight. I have usually a heavy tired feeling in my back which I can hardly describe as a pain. I am feeling much stronger now, though easily tired on exertion. I am quite able to perform my present duties."

CASE 2.—The patient was a male, aged 43 years. During the last ten years he had been subject to attacks of severe abdominal pain. These attacks came on at any moment, often whilst at work. Each attack laid him up for a fortnight. The pain would commence in the right hypochondriac region and pass round to the back, often being very severe between the shoulders. It did not tend to shoot downwards towards the inguinal regions. The pain was very severe, causing him to break out into a cold sweat. These attacks occurred on an average about twice every year. None of the previous attacks had lasted so long as the present one. None of them had been attended by jaundice, shivering, polyuria, hæmaturia, or vesical irritation. The case was first seen by one of us in an emergency in the temporary absence of his regular medical attendant, Mr. H. W. Freer of Stourbridge, late in December, 1903. The patient was then in great agony, ascribing his pain to the right hypochondriac and right half of the epigastric regions. He was jaundiced and excessively tender in the right upper abdomen. He presented superficially a typical picture of biliary colic, with which diagnosis Mr. Freer agreed on his return. As the condition did not improve he was again seen in consultation with Mr. Freer on Jan. 17th, 1904. The jaundice, though still present, appeared to be slightly less. The pain still continued with occasional acute exacerbations. On palpation a semi-fluctuating mass was felt projecting below the right costal margin and it could be felt extending into the lumbar region. The mass moved with respiration and was very tender to the touch. On percussion it merged with the hepatic dulness and the right kidney could not be felt apart from the mass. His temperature was 101° F., at which point it had kept during the past fortnight. The pulse was 104 per minute and the respirations were 26 per minute. There was no vomiting, diarrhœa, melæna, or loss of flesh. The urine was alkaline, was of specific gravity 1015, but was free from albumin or sugar. A chance word concerning the continuity of the dulness of the tumour with that of the kidney was overheard by the patient's sister (Case 1), who was also present at the bedside. She therefore made mention of her own case, saying that she had suffered from cystic kidneys, one of which had been removed. Three possible diagnoses suggested themselves—viz.: (1) subhepatic abscess arising from the gall-bladder, stomach, duodenum, or appendix; (2) cholecystitis; and (3) enlarged kidney, possibly general cystic disease, suggested by the patient's sister. In these circumstances it was decided to take the patient into the Corbett Hospital for an exploratory operation. He was admitted the same evening (Jan. 17th) and operated upon on Jan. 19th, 1904.

Operation.—An incision was made over the gall-bladder in the right linea semilunaris. The gall-bladder and bile-ducts were found on digital examination to be healthy and quite separate from the swelling. It was then ascertained that the mass which projected below the costal margin was behind the peritoneum and that it was in the position of the right kidney. Before closing the anterior abdominal incision the left kidney was examined and was found to be slightly enlarged but perfectly smooth on the surface. A second oblique incision was made in the right lumbar region and the kidney was exposed and was found to be enlarged enormously and the seat of general cystic disease. As the organ appeared to be functionally useless and the origin of his agonising pain it was deemed advisable to remove it, especially since the left kidney showed no irregularities upon the surface. Nephrectomy was performed without producing any great shock to the patient. The artery, vein, and ureter of the kidney were secured separately by silk ligatures.

Pathological appearances.—The excised kidney on removal weighed 1 pound 9 ounces (708·5 grammes) and had the following measurements: length, five and a half inches (13·75 centimetres); breadth, three and a quarter inches (8·75 centimetres); and thickness, two and a half inches (6·25 centimetres). It was quite soft to the touch and its surface was studded with thin-walled cysts varying in size from that of a pin's head to that of a small Tangerine orange. The cysts were situated in the kidney substance and were not evacuated on removing the capsule. The contents of one of the large cysts was aspirated and examined in order to ascertain if it contained urinous substances. The following is the result of the examination. Microscopically, epithelial cells and cholesterin crystals; chemically, urea 0·18 per cent. and proteid 0·42 per cent. Into one of the branches of the kidney pelvis was injected a solution of methylene blue at considerable pressure. On making a section of the kidney eight hours afterwards it was found that several of the cyst contents corresponding to that division of the pelvis were stained with the methylene blue showing that there was a continuity between the kidney pelvis and the interior of some of the cysts. After making a section of the kidney it was found that the cysts were present in both cortical and medullary portions of the kidney, but that they were more numerous in the medullary portion and that a distinct layer of normal kidney tissue could be recognised by the naked eye on the surface of the kidney, whilst no normal kidney tissue could be seen in the deeper parts. The contents of the cysts varied from clear fluid to dark-brown gelatinous substance. There was no contraction or dilatation of the kidney pelvis or of the ureter and no calculi were found in any portion of the kidney substance or pelvis.

Microscopical sections.—These showed that the cysts were situated in both cortical and medullary portions. The cysts were usually lined by a single layer of epithelium varying from the simple squamous to the high columnar type. Occasionally a cyst was devoid of epithelial lining but there was no evidence of Malpighian bodies attached to any of the walls of these cysts as have been described in other cases. Many of the cysts were surrounded by a fairly dense layer of connective tissue, whilst others had no such fibrous support. The contents of the cysts largely consisted of homogeneous substance, staining a deep yellow with van Gieson's stain. Many cysts, however, contained catarrhal cells, polynuclear leucocytes, and even concentrically laminar bodies, very similar to those found in cysts of the prostate gland. Several of the cysts in this kidney presented beautiful dendritic intracystic projections lined by cubical cells similar to the lining of the cyst. As in Case 1, there appeared to be every gradation in size between the ordinary tubules and the larger cysts. There were large areas of perfectly healthy tissue, there were still larger areas in which the tubules showed the typical appearance of a chronic parenchymatous nephritis, and there were areas of loose fibrous tissue in which the tubules seemed to have disappeared altogether. As in Case 1, there was widespread destruction of Malpighian bodies apparently due to a process of thrombosis with subsequent cicatricial overgrowth. The connective tissue of the kidney was generally increased and there were large tracts of round-celled infiltration indicative of inflammatory reaction. The degree of cystic change in Specimen 1 was much more advanced than in Specimen 2, and despite the absence of macroscopic evidence of healthy kidney tissue there were large tracts of normal kidney tubules in each specimen that appeared to be capable of performing excretory functions with a varying degree of efficiency.

After-history.—The patient rallied from his operation very satisfactorily. His temperature remained normal for three days, after which it began to fluctuate, rising in the evening to 101°, 102°, and 103°, and falling in the morning to 98°. This fever was due probably to phlebitis which began in the right femoral vein and later spread to the left femoral vein. The lumbar wound remained healthy for about a week after operation when it was opened up in the hope of finding retained suppuration to account for the fluctuating temperature. No pus was found but the wound now became infected and continued to discharge up to the time of death. This long-continued discharge was doubtless due to infected silk ligatures. The wound in the linea semilunaris healed by primary union. A faint haze of albumin was discovered in the urine for the first time on Jan. 24th, five days after operation. Pus was discovered in the urine for the first time on March 4th, six weeks after the operation. This was accompanied by tenderness over the left kidney; tube casts were noticed in the urine shortly after this, which facts strongly suggest that the left kidney became the seat of pyelonephritis about this date. The left kidney was carefully watched during his stay in hospital and it was felt gradually to increase in size, becoming palpable about three weeks after the operation and later becoming irregular on the surface, suggestive of general cystic disease. Although the amount of urine was increased,

for a time its specific gravity was maintained. Towards the end of his sojourn in hospital, however, the renal secretion diminished in quantity and deteriorated in quality, as shown by the specific gravity. The reaction of the urine varied considerably; though generally alkaline there were days, and even weeks, when it was acid. On April 12th, 1904, a careful microscopical and analytical examination was made with the following result:—

Analysis of Urine.

Volume, 1215 cubic centimetres per diem; specific gravity 1012; reaction, alkaline; sediment, triple phosphates, tube casts, and an enormous amount of mucus. Organic solids, 2·03 per cent.; ash, 0·93 per cent.; total solids, 2·96 per cent.

	Per cent.		Per cent.
Urea	1·25	Ethereal sulphates (SO_3)	0·013
Uric acid	0·0042	Phosphoric anhydride	0·22
Hippuric acid	0·0088	Mucus, pigment, &c.	0·8814
Creatinin	0·0097	Solids	2·96
Phenol	0·0079	Water	97·04
Chlorine	0·425		100·00
Inorganic sulphates (SO_3)	0·139		

Cammidge's pancreatic reaction was tested upon this urine with a negative result. In both the A and B reactions no crystals were deposited. Whilst the patient remained in hospital there was no cardiac hypertrophy but there was some accentuation of the aortic second sound. There were little or no arterial sclerosis and no increased vascular tension. He had slight swelling of the feet, due partly to the femoral phlebitis. There was never any œdema of the lungs and his ocular fundi were perfectly normal. He left hospital on May 18th with a small discharging sinus, able to walk and to get about. After leaving hospital his strength did not return, owing to which he was compelled to spend a large part of the day lying down.

Seen by one of us in the middle of June in consultation with Mr. E. Fryer of Cradley the patient was then very anæmic and complained of great pain in the left kidney and of difficulty in getting about owing to weakness and breathlessness. His feet and legs showed œdema and there was œdema at the bases of both lungs. There was no ascites. The left kidney was much enlarged, irregular in outline, and tender on palpation. In length the kidney measured seven inches and in breadth three and a half inches; its lower end reached to the anterior superior iliac spine and anteriorly as far as the linea semilunaris. There was now some cardiac dilatation but the blood pressure was not, to all appearances, increased. The urine contained a large quantity of albumin and pus. Mr. Freer, who attended him just previously to his death, gives the following account of him. "The left kidney was as large as the right one previous to its removal. The patient became more and more emaciated and anæmic. The heart was dilated, the apex beat being felt outside the nipple line. The pulse gradually became quick, feeble, and irregular. There was considerable œdema in the lower extremities and a mild degree of ascites. The upper extremities and face were free from œdema. The sinus in his right side failed to heal up. Up to the very end the patient suffered severe pain in the region of the left kidney. A week before his death the urine became scanty and almost suppressed and contained a considerable amount of albumin. Death occurred in August, 1904, seven months after his operation."

Summary.

Case 1.—1893. Passed three urinary calculi; pain in left loin.
1896. Migrainous headaches commenced, lasting until the operation.
1901. September: One month of frequency of micturition; two weeks of paroxysmal attacks of renal colic; left lumbar tumour first discovered. October: Nephrectomy of the left kidney. Steady convalescence with three years of good health, accompanied by gradual growth of right kidney.
1904. January: Three slight attacks of migraine. September: Right renal pain, hæmaturia, cleared up by rest. November: Still performing her duties with apparent good health.
Case 2.—1894. Paroxysms of right-sided abdominal pain commenced, recurring about twice every year.
1903. December: Right-sided abdominal pain accompanied by jaundice; large mass felt below right costal margin first discovered.
1904. January: Operation, nephrectomy of the right kidney; infection of the wound; phlebitis of the femoral vein. March: Rapid enlargement of the left kidney, supervention of pyelonephritis. June: Failure of general health, increasing cardiac weakness. August: Increasing cardiac and renal inefficiency; partial suppression of urine; death.

Remarks.—The occurrence of this rare disease in two members of the same family is a point of unusual interest. The patient in Case 1 suspects that another brother of hers is also affected with general cystic disease of the kidneys because he suffers from severe headache, pain in the loin, and occasional attacks of frequency of micturition. A specimen of the urine of this third member is, however, perfectly healthy, but as he refuses to submit himself to medical examination there has been no opportunity of ascertaining if the sister's suspicion is correct or not. Carl Beck[1] records a case of multiple cysts in the kidney upon which he performed nephrectomy and in this instance no less than three sisters suffered and died from the effects of this disease. This family tendency is not mentioned amongst the collected cases of Ritchie[2] and others, yet it is quite certain that such occurrences are not accidental and that they point to a constitutional tendency which is, at least, a predisposing factor in the etiology of the disease. The age at which this disease was noticed in the foregoing cases is almost identical with the average of general cystic disease of the kidney in the adult—viz., 45 years. The history in each case points to renal mischief extending over nine or ten years, so that the onset of the disease was very slow. There is probably a period of years of gradual development in which symptoms exist more or less severely, but during which a physical examination is either never made and thus a possible enlargement is undiscovered, or, if such an examination is made, the enlargement is not sufficiently marked to call for special attention. Several cases, however, in our own experience have never consulted a medical man until one or both of the kidneys had assumed enormous dimensions, showing that the disease is occasionally symptomless for some considerable time.

The two cases under discussion present some clinical features worthy of notice. It is impossible to say whether the calculi passed by Case 1 in 1893 had any causal relationship to the onset of the disease or were secondary to its establishment. For five years the same case was subject to severe headaches which were entirely relieved, for three years at least, by nephrectomy. These headaches can scarcely be similar in nature to those which occur in Bright's disease, otherwise the removal of one kidney would not have cured them seeing that the opposite kidney was also affected. It is more than likely that this migraine was due to mobility of the left kidney and that the removal of this organ cured them as nephropexy or nephrectomy does in cases of ordinary moveable kidney who have previously suffered from severe headaches. Two and a half years after the operation there was a slight recurrence of migraine, due, no doubt, to mobility and dragging of the enlarged right kidney. The attacks of severe lumbar pain which so frequently attend the development of this rare disease have been explained in various ways, as, for example, by mobility of the kidney, sudden tension of the cyst contents, hæmorrhage into cysts, or the passage of blood, mucus, crystals, or calculi down the ureter. We are convinced, however, that sudden lumbar pain is occasionally due to rupture of cysts and the extravasation of their contents into the loose tissue around the kidney. This is borne out by the cicatrices seen on the surface of some of the specimens of cystic kidney. The thin wafer-like walls in some of the cysts in Specimen 1 clearly indicate how easily such a rupture could be produced. The jaundice of Case 2 was probably due to the rupture of a cyst at the inner and upper pole of the right kidney, the extravasated contents of which pressed upon the common bile-duct and so produced obstructive jaundice. In another case of general cystic disease well known to one of us the following development occurred. The patient was suddenly seized with an attack of acute lumbar pain. On examination a fluid swelling was found in the lumbar region which ran forward into the muscles of the abdominal wall. The swelling was regarded by an eminent surgeon as a possible dissecting aortic aneurysm. Subsequently this swelling disappeared of itself and six months afterwards at the patient's death it was found that he had been suffering from general cystic disease of both kidneys. There was little doubt in this case that a superficial cyst had ruptured, accounting for the sudden attack of lumbar pain and the production of the fluctuating swelling.

The diagnosis of this disease may be in advanced cases a matter of comparative ease, or, as in the case just referred to, even to the last it may remain very obscure. Although this case had been seen by many specialists both in London and Birmingham cystic kidney was never diagnosed, chiefly

[1] Annals of Surgery, vol. xxxiii., p. 147.
[2] Laboratory Reports, Royal College of Physicians of Edinburgh, 1892.

because the huge kidneys were well anchored under the costal margin, so that they could not easily be palpated. When the organ falls below the costal margin there is a much better chance of palpating its surface and of discovering the highly characteristic irregularities and possibly fluctuating areas. Bilateral enlargement is very suggestive of general cystic disease. In Case 1 sufficient importance was not attached to the slight enlargement of the right kidney, as the physical characters of the left renal enlargement were absolutely typical of general cystic disease. The pathological characters of the urine are not sufficiently striking to help us much in the diagnosis of the disease. The urine is generally increased in quantity, often considerably so, but deficient in quality, showing a low specific gravity and a deficiency of solids. The reaction is generally alkaline but for short periods it may be acid. There are generally pus, red blood cells, and epithelial cells present in varying quantities. The urine contains albumin or globulin which, however, is generally derived from the pus, blood cells, or epithelial cells, since the filtered urine is proteid-free. Peptone and reducing substances like sugar are absent. Nitrogenous metabolism, as indicated by the excretion of urea, uric acid, hippuric acid, and creatinine, is for the most part sluggish. Intestinal putrefaction, as shown by the small percentage of ethereal sulphates and the absence of phenol, is low. Phosphates and chlorides vary considerably in amount according to the special diet taken. Hippuric acid is sometimes absent, in other cases it appears in the urine in larger quantities than normal. Tube casts are not as a rule present in this disease; they were met with in Case 2 which, however, was complicated with a nephritis. We have never seen any of those granulated cylinders in the urine which are described by certain observers. It is evident, therefore, that the renal secretion in general cystic disease is almost identical with that found in hydronephrosis and in some cases of pyonephrosis of calculous origin. One is therefore compelled in making a differential diagnosis to rely upon physical examination and especially to look out for such characters as irregularity of outline, a general solid firmness with fluctuating areas and a bilateral tendency which occurs in this disease. The method adopted by Hoehne of puncturing the cysts in order to discover whether the rosette bodies described by him are present or not is a procedure of very doubtful value and is fraught with some danger. These rosette bodies, which correspond to the concentrically laminar bodies described by us, are not present in every cyst. It is difficult to puncture cysts at such a depth, for, obviously, it can only be done safely through the loin. Cysts may become very superficial when the kidney passes out anteriorly below the costal margin but if an attempt is made to puncture them in this situation there is a great danger of fouling the peritoneal cavity either by accidentally puncturing the colon or by infecting it with contents of the cysts which are not always sterile. A much safer and more scientific procedure in all such cases, whether the diagnosis of cystic disease is certain or not, is to expose the mass by the usual lumbar incision. In this way alone can the surgeon in many cases make an absolute diagnosis and at the same time be in a position to treat the case as he finds it.

In perusing the literature of this obscure disease one realises how scanty is the material which can be of service in determining which is the best line of treatment to adopt. The dread of post-operative suppression and uræmia in this disease seems to have acted as a paralysing agent on the minds of physicians and surgeons. It is natural, perhaps, to imagine that a large cystic kidney like that of Case 1 is functionally useless and that the opposite one is doing all the work. If this were the case the remaining kidney would not rapidly increase in size after operation as it did in each of the cases just described. Furthermore, when careful microscopical examinations are made of these large cystic kidneys large areas of perfectly healthy, and still larger areas of partially healthy, kidney tissue are found, which, however, are not visible to the naked eye. It is quite certain that the ever-increasing pressure of growing cysts must slowly strangle and render functionless the areas of secreting tissue around them, but it is impossible by superficial inspection to estimate when that destruction has become complete. For this reason it is questionable whether the operation of nephrectomy is ever justifiable in general cystic disease. Several surgeons imagine that if one kidney is cystic and the other is apparently normal to the touch it is good treatment to remove the cystic organ on the supposition that it will prevent cystic development in the other. In the first place, one cannot detect early cystic changes by simple palpation of the kidney through an exploratory wound into the peritoneal cavity; and, in the second place, cystic disease is not infectious in the same sense as tuberculosis of the kidney is. It is more than likely, even if one kidney is healthy, that the increased demand made upon it when its less fortunate partner is removed must augment its tendency to cystic disease. One realises, of course, that severe symptoms such as were present in both of these cases must call for serious attention on the part of the surgeon. The operation of nephrectomy was justified in Case 1, in so far as it has given the patient three years of comfortable and useful life, though it will in all probability shorten her existence. Nephrectomy is too extreme a remedy to adopt in a disease which is probably constitutional and not local in nature. It always means the removal of excretory tissue the functional capacity of which one can never accurately estimate and the throwing of the entire work of urinary secretion upon the opposite kidney, which is, in all probability, in an earlier stage of the same disease.

The operative measure which has so far given the best results is that of free incision of the diseased kidney. A case so treated by Curtis[3] was alive and well ten years after operation; another by Kammerer[4] was alive and well three years after operation; in both these cases the affection was bilateral at the time of operation. This mode of procedure consists in the free incision of the cortical substance and the systematic opening of all the larger cysts which are then packed with gauze in order to secure their entire obliteration. In this way the size of the organ and the pressure within its capsule are enormously diminished. The compression of the more or less healthy tubules is thus relieved. The kidney is thoroughly anchored in the loin and the symptoms dependent upon mobility disappear. This free incision does not appear to be attended by the formation of permanent fistulæ unless there is some contraction of the kidney pelvis, in which case the establishment of a fistula would be an advantage to the sufferer. There is also very little risk of severe hæmorrhage. Such a method of operative procedure, when applied first to one kidney and then to the other as they increase in size, must best preserve for a longer or shorter time the functional capacity of the diseased organs and thereby prolong the life of their unfortunate possessor. Suppression and uræmia are less likely to follow the operation of free incision than when complete nephrectomy is performed, simply because the increased nitrogenous elimination occasioned by operation is shared by both organs. Among the indications for operation in cystic disease of the kidney the following may be mentioned—attacks of severe lumbar pain, vomiting, hystero-epilepsy, migraine, and threatened suppression or uræmia.

We purposely avoid discussing the pathological significance of these specimens at the present time as one of us intends to publish shortly a paper bearing specifically upon this subject.

The after-history of these two cases is somewhat different. Case 1 is still in fairly good health and able to perform the duties of housekeeping with comfort. We gave her, in our own minds, about one year of life after her nephrectomy; she has obviously outstripped that expectation by several years. It only shows how functionally active these large cystic kidneys are and how slow we should be to condemn such diseased organs as useless. In Case 2 the chances of the patient's recovery became hopelessly handicapped when sepsis and pyelonephritis set in. He never really regained anything like his normal health and he eventually succumbed to a combination of renal and cardiac inefficiency. It is thus obvious that although nephrectomy was performed in each of the cases just related with a varying degree of success we would after careful consideration advise in future cases free incision rather than removal of the kidney.

In conclusion, we wish to thank Mr. Barling for permission to publish his case and Dr. Tibbetts, Dr. Kelly, and Mr. Freer for their willingness and courtesy in supplying us with some of the facts concerning the cases.

[3] Annals of Surgery, vol. xxxiv., p. 419.
[4] Ibid.

SOCIETY OF APOTHECARIES OF LONDON: UNVEILING OF ST. LUKE'S WINDOW.—Owing to the visit of the King of Spain to the City on June 7th next the unveiling will take place on Monday, June 5th, instead of June 7th, as originally arranged.

TWO CASES OF GANGRENE WITH SPONTANEOUS AMPUTATION.

BY E. OWEN THURSTON, M.B., B.S. LOND., F.R.C.S. ENG., CAPTAIN, I.M.S.; RESIDENT SURGEON, MEDICAL COLLEGE HOSPITAL, CALCUTTA.

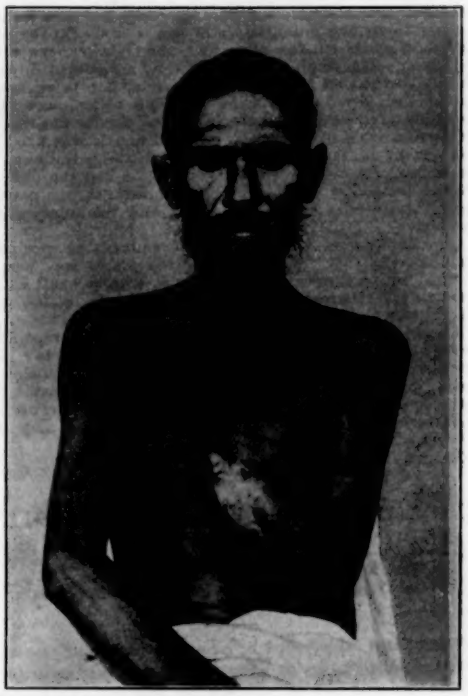
THESE two cases show to what an advanced stage natives of India will allow disease to progress before applying to a hospital for relief. The first case was under the care of Major D. M. Moir, I.M.S., to whom I am indebted for permission to publish it; the second was under my own charge when officiating as professor of surgery at the Medical College Hospital.

CASE 1.—The patient, a Hindu male, aged 50 years, was admitted to hospital on Sept. 12th, 1904. In January of the same year he noticed that the tips of the fingers of the left hand had become insensitive; the anæsthesia spread upwards to about the middle of the forearm. A week later he suffered from fever and 15 days from the commencement of the anæsthesia a small bleb was noticed in the cleft between the thumb and forefinger which broke down and ulcerated, more blebs appeared, and the soft tissues of the hand and forearm gradually sloughed away until by April (four months) only the bones of the hand and wrist were left. During this time he suffered a good deal of pain and there was continuous fever, a large quantity of pus was discharged, and he became weak and emaciated. In the same month he had a fainting attack and a local practitioner was called in who administered stimulants and soon afterwards amputated at the wrist. Towards the end of April a line of demarcation formed in the upper part of the forearm; the soft tissues and finally the bones dropped off while he was applying a lotion made from "*nim*" leaves. The fever which had been continuous up to that date ceased after the separation of the gangrenous part.

On admission the following history was obtained. He had suffered from syphilis 30 years ago but had never had rheumatism or any heart trouble, nor was there any history of injury. On examination of the heart reduplication of the second sound was detected down the right side of the sternum, otherwise the physical signs were normal. The peripheral arteries were not markedly atheromatous. The urine contained no albumin. The left forearm had spontaneously separated about the middle with the formation of a conical ulcerated stump. Major Moir amputated through the condyles of the humerus with a posterior elliptical skin-flap on Sept. 21st; the arteries were found to be thrombosed. A portion of the end of the flap sloughed and the bone protruded, but in spite of this the wound shortly healed. Convalescence was retarded by an attack of pneumonia in the beginning of October. He left hospital completely cured on Dec. 5th.

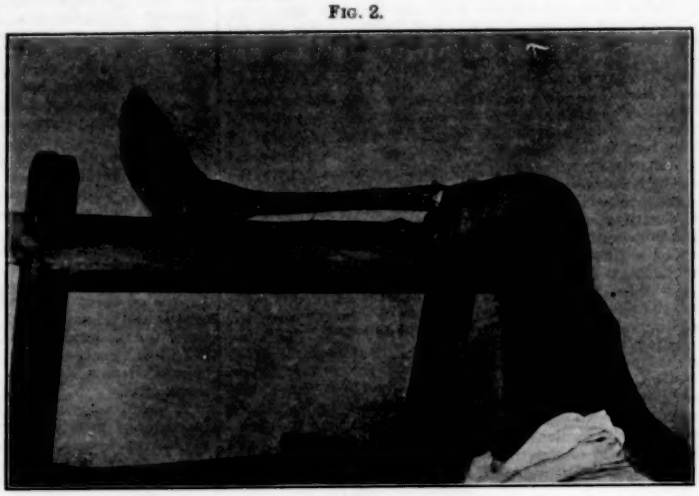
CASE 2.—The patient was a Hindu male, aged 40 years, and was admitted into the Medical College Hospital on May 7th, 1904, with gangrene of the right foot and leg. Four months before admission he suffered from fever, probably malarial in origin. On the tenth day of this attack he suddenly felt a burning sensation in the right leg accompanied by severe pain which was shooting in character and referred mainly to the distribution of the sciatic nerve. Within 24 hours the limb became insensitive and cold and then gradually began to swell and to assume a reddish appearance. The pain increased for some days and then gradually diminished. The fever ceased about ten days from the commencement of the leg trouble. One month later he noticed that some small blisters appeared over the leg and foot; these persisted for about three weeks, accompanied by the discharge of thin serous fluid; the leg at that time became more painful and there was much itching in the limb. About one month before admission sloughs appeared, at first just above the heel but later extending up the leg, and the foot became mummified. The sloughs gradually separated, the patient himself removing them when loose, until finally only the bones remained from the ankle to the level of the tubercle of the tibia.

FIG. 1.



On admission no history of syphilis or other previous illness was obtained; the patient appeared to be fairly

FIG. 2.



healthy. The heart sounds were weak, giving one the impression that the muscle was flabby; no murmur could be detected. No atheromatous changes were found in the peripheral arteries. The urine was of low specific gravity but contained no albumin or other abnormal constituents. The right foot was mummified and black; above it with the exception of the ligaments of the ankle-joint only the bare bones of the leg remained up to just below the level of the tubercle of the tibia and here the bones had been deeply eaten into by the granulations of the stump. On the day following admission the fibula and, shortly after, the tibia separated. The thigh was amputated by a modified Stokes-Gritti's method on May 13th, the posterior flap being made longer than usual on account of there being more skin available on this aspect of the leg. The patella was small; its cartilage was only partially removed and it was fixed in position by silk sutures passing through the periosteum of the femur. There was a little suppuration and the patient was discharged with a small sinus on July 9th, the patella being firmly adherent to the femur and the stump satisfactory.

Captain Leonard Rogers, I.M.S., examined the specimen and reported that "the lumen of the artery was nearly blocked by partly organised blood-clot with a small canal through it. Microscopically the inner elastic lamina was clearly seen and no atheromatous changes found."

These two cases in conjunction seem to be worth reporting as they show an advanced stage of gangrene which is rarely seen at the present day. The first case from the slower onset was probably due to thrombosis, the second to embolism from a thrombus forming in a weak heart during an attack of fever. Unfortunately, in the first case the arteries were not examined.

Calcutta.

EPIDEMIC CEREBRO-SPINAL MENINGITIS AND POSTERIOR BASIC MENINGITIS.

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THERE is a widespread belief—more particularly outside England—that posterior basic meningitis is a sporadic form of the epidemic disease. Koplik, for example, in his recent work on the Diseases of Children deals with the epidemic disease briefly and dismisses posterior basic meningitis with the remark that it is considered a separate disease in England and that it runs a protracted course.

Posterior basic meningitis accounts for one-third of all the cases of meningitis amongst the in-patients at Great Ormond-street Hospital (133 out of 393 consecutive cases). By the kindness of the staff of that hospital I have recently had the opportunity to investigate the histories of over 100 cases of posterior basic meningitis and the present seems an opportune time to record briefly and as far as our present knowledge permits in what points this disorder stands out and apart from epidemic cerebro-spinal meningitis as a disease *sui generis*.

No doubt the ultimate decision rests with the bacteriologists, but the bacteriology of the cerebro-spinal fluid is just now at a very perplexing stage. For example, Hunter and Nuthall in nine cases of posterior basic meningitis found a diplococcus identical with the meningococcus. In three cases the culture was pure, in three it was associated with the influenza bacillus, in one with the tubercle bacillus, and in one with staphylococci. Mya described three cases of fibrino-purulent meningitis in breast-fed infants in which the Pfeiffer bacillus was present. Gleon obtained these bacilli from the fluid yielded by lumbar puncture in a child eight months old. Schultze mentions a number of instances in which the pneumococcus has been found "in the so-called sporadic cerebro-spinal meningitis," and adds that it is found not seldom ("*nicht selten*") in the epidemic form. Osler says: "The pneumococcus has been found frequently in association with the diplococcus of Weichselbaum in cerebro-spinal fever." The pneumococcus, indeed, appears to be almost ubiquitous. "No organism is more variable than the pneumococcus in its virulence and pathogenic results. ..... The form of primary meningitis set up by the pneumococcus may in every detail apparently resemble the post-basal form described by Lees and Barlow, or the epidemic cerebro spinal form." (Leith.)

It is very important to realise that one has not necessarily found the cause of the disease because one has shown the presence of a potentially pathogenic organism in a case of meningitis. I had under my observation a case which the physician in charge considered an example of pneumococcus meningitis. I performed a lumbar puncture and the pathologist reported that he obtained a pure culture of pneumococcus. Nevertheless, the necropsy revealed a typical tuberculous meningitis.

Clinically the epidemic disease shares many features in common with posterior basic meningitis. To those who consider the two diseases identical the differences are comparable to those which are found when two separate epidemics are contrasted. As Osler says, "The clinical features of the sporadic form present interesting variations which are worthy of additional study."

1. Although it proves nothing, it is a very interesting fact that our knowledge of the sporadic disease antedates the earliest descriptions of the epidemic fever by several years. Nothing was known of the epidemic disease before the nineteenth century and there was no description of its occurrence in the British Isles before 1830. Nevertheless, that one type of posterior basic meningitis was common enough in 1827 is shown by the description which Alexander Monro (the third generation of that family of great physicians) gave in his work on the Morbid Anatomy of the Brain, published in that year. Dealing with chronic hydrocephalus he remarks that the 14 cases which he himself had seen were all born with large heads and continues: "But according to some authors the disease appears soon after birth or even a few years after it. The child seems dull. This dulness is accompanied with headache and fever, which is much more severe at times and is attended by sickness and vomiting. The appetite is impaired and the food is apt to excite nausea. The headache becomes more severe and constant and is *accompanied by pain and stiffness in the neck* and with frequent and irregular pulse, but in some cases is slower than natural. The eye is dull and the vision is indistinct; the skin is hot and the pulse frequent and irregular. The urine is discharged with pain and difficulty. After the above symptoms the head expands." No one familiar with the disease would deny that this is a very succinct account of one form of posterior basic meningitis which results in hydrocephalus.

2. There is a very definite difference in the age incidence of the sporadic and epidemic diseases. Osler says that more than half the cases of the latter are in persons under ten years of age. More than half the cases of posterior basic meningitis are in infants under one year of age.

3. The protracted nature of many of the cases of posterior basic meningitis has no parallel in the epidemic disease. The significance of this difference which is generally recognised is difficult to gauge. Most of the sequelæ of the former disease are associated with internal hydrocephalus. For this reason and on account of its altogether insidious nature it is very difficult to give any general pronouncement on the duration of the disease. But there is every reason to suppose that the inflammation of the meninges not infrequently endures for several months.

4. I find nothing in the accounts of the epidemic illness of amaurosis without optic neuritis which is so remarkable a feature of posterior basic meningitis and which occurs in one-third of all the cases of that disease (27 out of 78 of my cases).

5. On the other hand, optic neuritis seems fairly common in epidemics (six out of 40 cases—Randolph). It is very rarely met with in posterior basic meningitis. There was only one undoubted instance in the whole of my series of cases.

6. "Moos found in 64 cases of recovery from cerebro-spinal fever that 55 per cent. of the persons were deaf." Only three of my cases complained of subsequent deafness. In one of these it was very slight and associated with large tonsils and adenoids and in another it was after three operations for subdural drainage. So that in only one case did it follow directly from the primary disease and it must be concluded that deafness is a rare sequel of posterior basic meningitis.

7. Skin lesions, although they occur, are much less common in posterior basic meningitis than in the epidemic fever. In my series herpes, which is so characteristic of cerebro-spinal fever, is only described twice. I know nothing of petechial rash in the sporadic disease. Osler, in his

description of cerebro-spinal fever in the Encyclopædia Medica, says: "A petechial rash, which was so common in the early epidemics that the disease had the name of spotted fever, was present in more than one-third of our cases."

8. There are further minor yet significant symptoms in posterior basic meningitis, such as retraction of the upper eyelids, which I do not find mentioned in the accounts of epidemics. How far these differences are dependent upon the earlier age incidence of posterior basic meningitis it is impossible to say. It is noteworthy that in that disease amaurosis is less common in older children.

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Northwood.

A SECOND CASE OF PNEUMOCOCCUS ENDOCARDITIS TREATED BY ANTI-PNEUMOCOCCUS SERUM.

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IN THE LANCET of June 4th, 1904 (p. 1561), one of us (T. J. H.), with Dr. A. E. Garrod, reported a case of pneumococcus endocarditis treated by anti-pneumococcus serum. The disease was very acute and the whole duration of it probably not longer than three weeks. The pneumococcus was cultivated from the blood three days after the patient was first seen. A case has recently come under our observation which was of longer duration, lasting more than two months. But a bilateral pneumonia, followed by a double empyema, occurring in a child convalescing from rheumatic fever constituted a very serious condition from the first. And the presence of pneumococci in the circulation was not demonstrated until quite late in the course of the illness. Nevertheless, seeing that during the present state of probation of bactericidal sera accurate diagnosis in the cases treated by them is of the utmost importance, it is considered advisable to publish a brief account of the case.

The patient, a boy, aged ten years, suffered from enlarged tonsils and slight sore throat at the beginning of November, 1904. On Nov. 18th he was taken suddenly ill with headache, pains in the back and limbs, and a rise of temperature (101° F.). On the third day the joints were painful and swollen. He was seen by one of us (H. C. L. S.) and the disease was diagnosed as acute rheumatism. On the fourth day a mitral systolic murmur was heard. Sodium salicylate was given; the pains in the joints passed off and the temperature fell to normal on the eleventh day. On the thirteenth day the temperature rose to 102° and signs of pleurisy with consolidation of the right lung appeared. On the fifteenth day similar signs appeared on the left side; the temperature rose to 103° and stimulants and oxygen inhalations became necessary. Defervescence took place by lysis, the temperature becoming normal again on the twenty-first day; but thenceforth it rose daily to from 100° to 101° until the twenty-seventh day. The signs in the lungs remaining, the right pleura was explored; pus was discovered; a portion of a rib was resected and an empyema was drained by Mr. T. Crisp English. The intermittent fever continued. On the thirty first day the left pleura was explored with a similar result, a second empyema being opened and drained. The intermittent fever still persisted (102°–103°) despite efficient drainage of both empyemata. The mitral murmur was still heard and the pulse averaged 140. On the fifty-first day the patient was seen in consultation by Mr. C. B. Lockwood who found no evidence of any other focus of suppuration but suggested the existence of septicæmia. The patient was also seen in consultation by one of us (T. J. H.) on the same day and a blood examination was made. A blood count showed a leucocytosis of 11,600 and a blood culture grew pneumococci in considerable numbers in each of six culture tubes. By this time loss of flesh had become very marked, the patient being quite emaciated. Anæmia was also marked. The heart murmurs pointed to the presence of mitral obstruction and incompetence. Both empyema wounds were discharging freely; the pus contained pneumococcus together with staphylococcus albus and bacillus coli communis. The urine was natural. On the fifty-second, fifty-third, and fifty-fourth days respectively ten cubic centimetres of Pane's serum No. 2 were injected subcutaneously. This was repeated on the fifty-eighth and sixtieth days. On the sixty-second day signs of nephritis appeared: œdema, albuminuria with blood and epithelial casts, and severe headache. On the sixty-fourth day the urine became very scanty; on the sixty-fifth day the temperature became subnormal and the patient died comatose on the sixty-sixth day.

No good result seemed to follow either of the two periods of administration of the serum. The patient was so much exhausted by his disease at the time the serum was used that its failure seemed inevitable. The fact that the leucocyte count amounted to 11,600 only in a pneumococcal infection in a patient aged ten years showed that the resistance was much lowered. If, as recent researches seem to prove, we are dependent upon the patient's tissues for their reaction to the stimulus provided by a bactericidal serum, that is, the action is not a direct but an indirect one, it is easily understood why failure should follow the serum treatment in this case. The importance of early diagnosis of the existence of septicæmia, and the nature of it, becomes obvious. Death with the symptoms of a terminal nephritis is a common event in malignant endocarditis, and the occurrence of these symptoms is always a matter of the utmost gravity in such cases.

CONGENITAL ELEVATION OF THE SCAPULA.[1]

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JUDGING from the number of recorded cases this deformity is rare and as I have recently had the opportunity of observing one I have put together a few facts concerning this malformation in the hope that they may be of interest to the members of this society. The patient was shown at a meeting of the society on Jan. 22nd, 1904.

The patient, a girl, aged nine years, was taken to the Victoria Hospital for Children on Dec. 17th, 1903, because of deformity of the left shoulder-blade, which had been noticed for one month. There was no history of accident or infantile paralysis. No other member of the family had a similar or any other deformity. The patient had always been "delicate" but had had no definite symptoms. On examination the left scapula was found to be two and a half inches higher than the right but the bone was of the same size as its fellow. Movement of the arm, both active and passive, was normal. There was no osseous bridge to be felt between the vertebral border of the scapula and the spine, nor was there any lateral curvature of the spine. The spinous process of the third dorsal vertebra, however, felt thicker than normal and was apparently displaced slightly to the left. The inferior angle of the scapula was on a level with the interval between the sixth and seventh dorsal spines. There was no paralysis of any muscle. The x rays showed nothing abnormal and the two arms were of the same length. The child's head was rickety in appearance but there were no other signs of rickets or of any other deformity. The teeth were slightly notched and ridged, as is generally the case in ill-nourished children. As the child suffered absolutely no pain or inconvenience from her condition no active treatment was adopted, especially as the deformity was barely visible, except when the patient was undressed. In the only other similar case with which I am acquainted, where operative measures were adopted in order to correct the deformity, very little, if any, benefit followed a very severe operation.

Cases of congenital elevation of the scapula may be classified into four groups: (1) where there is a bridge of

[1] A paper read before the Clinical Society of London on Nov. 11th, 1904.

bone between the vertebral border of the scapula and the spine; (2) where there is absolute absence of one or more muscles forming the shoulder girdle; (3) where there is a long and everted supraspinous portion of the scapula; and (4) where there is no osseous bridge and the scapula is normal or smaller than usual, with short or otherwise defective muscles. The great majority of recorded cases fall under the last group. Cases falling under the second group are very rare, only five instances having been met with. The most interesting cases are those where there is an osseous bridge between the scapula and the spine, as it is still undecided how this piece of bone is formed. Moreover, it can be dealt with surgically with most gratifying results. When present it is usually triangular in shape, the base being attached to the vertebral border of the scapula and the apex to the spinous process of either the seventh cervical or the first dorsal vertebra. In many instances the actual union to the scapula and spine is by cartilage which allows a certain amount of movement. The arm, however, can rarely be raised beyond a right angle. Various theories have been brought forward to explain the presence of this abnormal bridge of bone, the chief of which are that it is formed in connexion with the vertebræ and afterwards becomes attached to the scapula, or that the reverse of this is the case, or that it is independent of both.

Mr. A. Willett and the late Mr. W. J. Walsham described the first two cases, records of which are to be found in the Transactions of the Royal Medical and Chirurgical Society for 1880 and 1883 respectively. In the first of these there were multiple deformities present besides that of the scapula. The clavicles, the ribs, and the sternum were all abnormal and in addition there were 12½ vertebræ missing. The left scapula, which was fixed by a broad ridge of bone to the spine, was much shorter than normal and was in appearance more like a scapula at birth. The osseous bridge was partially united by cartilage to the scapula. The second case was that of a girl, aged eight years, whose left scapula was one inch higher than the right. A triangular bridge of bone between the scapula and the seventh cervical vertebra was present which caused much impairment of movement of the arm. The osseous bridge was removed and was found to be connected to both the spine and scapula by a layer of cartilage. Similar cases have been recorded by Mr. Goldthwaite and Mr. Painter,[2] by Mr. H. S. Collier,[3] and by Mr. Hibbs and Mr. Loewenstein.[4] Maydl[5] has related two similar cases; in both the left scapula was affected and a bridge of bone was present, and both the patients were girls. Removal of the osseous bridge restored the normal movements of the arm in both instances. In THE LANCET[6] there is a report of a case which Mr. H. J. Stiles showed at the Edinburgh Medico-Chirurgical Society. The left shoulder was affected and a mass of bone was found growing from the upper border of the scapula and was wedged against the transverse processes of the vertebræ. Abduction of the arm was impossible until the osseous bridge was divided.

In discussing the formation of this osseous bridge Mr. Willett and Mr. Walsham regarded it as an "abnormal development of the suprascapular epiphysis, which normally exists as a narrow ridge of bone along the posterior border of the scapula, and consequently as homologous to the suprascapular bone of some of the lower vertebrates. The suprascapular epiphysis in man may actually present an abnormal backward development comparable to that, say, of the rabbit. It is advancing, therefore, but one step further to compare the bridge of bone in our specimens to the distinct suprascapula of the frog, and but one step further still to conceive it united to the spine, as in the skate. This means that the shoulder girdle in these cases has reverted to that of a lower type."

Cases similar to mine, where no osseous bridge is present, have been recorded by Mr. H. B. Robinson,[7] by Mr. Goldthwaite and Mr. Painter and by Mr. Hibbs and Mr. Loewenstein. Mr. H. A. T. Fairbank also showed two cases of this deformity at a meeting of the Clinical Society of London on Oct. 28th, 1904.[8] It has been noticed that the deformity is unilateral and is more often present on the left side than on the right. The neck muscles are usually shortened and other congenital malformations, such as spina bifida, shortness of the arm on the affected side, &c., are frequently present. The deformity has been said by some to be caused by intra-uterine rickets, accident at birth, or an intra-uterine anterior poliomyelitis. The theory, however, which seems to account for the elevation of the shoulder in the most satisfactory manner is that suggested by Sprengel in 1891. He came to the conclusion that the arm became fixed in utero behind the back and thereby caused elevation of the scapula.

Wimpole-street, W.

[2] Transactions of the American Orthopædic Association, 1901.
[3] Transactions of the Society for the Study of Disease in Children, 1902.
[4] New York Medical Record, August 1st, 1903.
[5] Sbornik Klinicky, 1904.
[6] THE LANCET, May 28th, 1904, p. 1505.
[7] Transactions of the Society for the Study of Disease in Children, 1902.
[8] THE LANCET, Nov. 5th, 1904, p. 1286.

IS MAN POLTOPHAGIC OR PSOMOPHAGIC?

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DURING the last four years an entirely new light has been thrown on the problems of human nutrition by the initiative of Mr. Horace Fletcher and Mr. E. H. van Someren. The following is quoted from a report by Sir Michael Foster, made after their visit to Cambridge in the autumn of 1901: "The adoption of the habit of thorough insalivation of food was found in a consensus of opinion to have an immediate and very striking effect upon appetite, making this more discriminating and leading to the choice of a more simple dietary, and in particular, reducing the craving for flesh food. The appetite, too, is beyond all question fully satisfied with a dietary which had a total considerably less in amount than with ordinary habits is demanded." Mr. Fletcher's persistence and generosity were responsible for the remarkable work carried out by Professor Chittenden at Yale University. Its importance can be judged from the following extract: "Confining our conclusions to general statements, it may be said that our results, obtained with a great diversity of subjects, justify the conviction that the minimal proteid requirements of the healthy man under ordinary conditions of life are far below the generally accepted dietary standards, and far below the amounts called for by the acquired taste of the generality of mankind. Expressed in different language the amount of proteid or albuminous food needed daily for actual physiological requirements of the body is not more than one-half that ordinarily consumed by the average man. Body-weight (when once adjusted to the new level), health, strength, mental and physical vigour, and endurance can be maintained with at least one-half of the proteid food ordinarily consumed; a kind of physical economy, which, if once entered into intelligently, entails no hardship but brings with it an actual betterment of the physical condition of the body. It holds out the promise of greater physical strength, increased endurance, greater freedom from fatigue, and a condition of well-being that is full of suggestion for the betterment of health."[1] Since Christmas, 1901, I have personally practised thorough mastication and have had many opportunities of observing the result of its practice in others. My interest in the subject has been two-fold: (1) to endeavour to ascertain the explanation of the phenomena presented during thorough mastication, both from an anatomical and physiological point of view; and (2) to make observations in its application of chronic disease.

In Gegenbaur's "Anatomie der Wirbelthiere," p. 90 (Vergleichender), is found: "The bifurcation of the alimentary canal below the soft palate does not depend only on its relations with the epiglottis but also on the condition of the food. The exclusive use of this means of swallowing is only possible with very finely divided food. ..... I have called this way of taking food poltophagy (poltos = masticated, finely divided) and the other psomophagy (psomos = biting)." I believe that this observation of Gegenbaur gives the clue to the explanation of these phenomena. It will be seen that the classical

[1] Physiological Economy in Nutrition, by Russell K. Chittenden, Ph.D., Sc.D., LL.D., p. 474. New York: Fredk. Stokes and Co., 1904.

explanation of the first part of deglutition is the description of that part of deglutition in a psomophagic animal. I propose to try to show that though man has obviously a psomophagic faculty he has the "evolution education" and the necessary anatomical structures to enable him to be poltophagic.

1. *Some observations on the prominent characteristics of poltophagic and psomophagic animals.*—The horse is a typically poltophagic animal. The soft palate is thick and muscular. Looked at posteriorly (by removal of the vertebræ and opening the pharynx) it will be found to extend downwards centrally well in front of the epiglottis. The opening of the fauces is comparatively small. The epiglottis is conspicuously large with rounded and everted edges. The soft palate forms with its lateral and posterior surfaces a grooved passage on either side leading by the laryngeal furrows to the pharynx, thus very clearly showing how the divided current of food is passed into the pharynx. It may be noted that the horse does not cover its nostrils with water when drinking and that the respirations are not synchronous with movements of suction and swallowing. The œsophagus can be readily felt and exposed by a simple incision. The food (hay or oats) is swallowed in long fusiform semi-fluid masses. A horse is unable to breathe through its mouth, so closely is the soft palate in contact with the tongue and epiglottis.

The dog is an equally good example of the psomophagic type. The soft palate is a thin translucent membrane, consisting of little else than the two layers of mucous membrane, showing a few scattered muscular fibres in the position of the azygos uvulæ, the soft palate apparently only serving as a valve to prevent the passage of food into the nasal fossæ. The opening of the pharynx is comparatively large. The epiglottis is small, pointed, thin, and pliable, being closely in contact with the tongue. The laryngeal furrows are not well marked. The well-known fact that the dog laps water shows that it lacks the power of suction by the soft palate.

2. *A brief description of the human poltophagic apparatus.*—It will be better to divide the mouth cavity into three parts for convenience of description: (*a*) an anterior buccal cavity; (*b*) the buccal passage leading into (*c*), the posterior buccal cavity. (See Fig. 2A, B, and C.)

(*a*) The anterior buccal cavity is the portion of the mouth between the tongue and the parietes of the mouth.

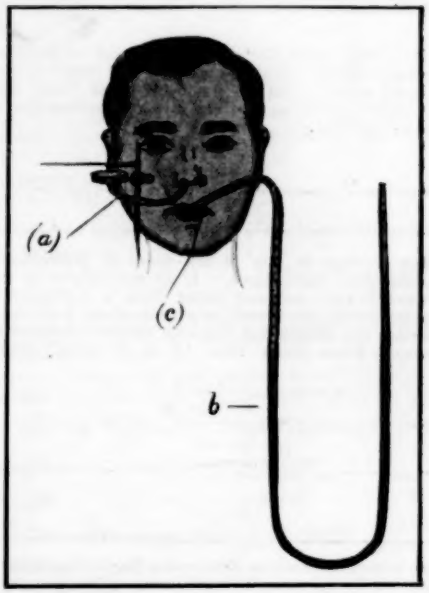
(*b*) The buccal passage, when the tongue is in contact with the hard palate while the mouth is closed, is bounded laterally by the molars of the upper jaw and the pillars of the fauces, below by the tongue as far as the circumvallate papillæ, and above by the hard and soft palate. It will be seen that the passage is long and semi-lunar in cross section, opening forwards between the tongue and the hard palate and posteriorly into the posterior buccal cavity. The musculature of the tongue is conspicuous for the remarkable complexity of the intrinsic and extrinsic muscles. Their arrangement permits of an extraordinary number of complex movements and changes of shape; thus, parts of the organ are able to execute independent movements. For example, if one lies on one's back it is possible, while holding water in the mouth, to block up the hinder part of the buccal passage and at the same time to move the fore part of the tongue freely in the mouth as in masticating without exciting a swallowing impulse. The central part of the tongue can be depressed either wholly or in parts or gradually from before backwards, making with the tongue and hard palate a sort of valvular opening from the anterior to the posterior buccal cavity. The presence of the taste buds in the immediate neighbourhood of the circumvallate papillæ would afford a means of determining whether a sample of semi-liquid food is in a fit state to pass on to the posterior cavity.

(*c*) The posterior cavity communicates anteriorly with the buccal passage and can be closed posteriorly by the soft palate. It is therefore bounded anteriorly by that portion of the tongue posterior to the circumvallate papillæ, posteriorly by the soft palate, and laterally by the junction of the soft palate and the tongue. In the soft palate is found an arrangement of muscles permitting a variety of movements; thus, the contraction of the palato-glossi, palato-pharyngei, and the tensores palati would cause the soft palate to tend to become flattened and the lower border to be applied to the posterior surface of the tongue. The contraction of the levatores palati (while the border is applied to the tongue) would cause the soft palate to be more concave anteriorly and to act as a suction pump.

3. *Some experiments illustrating the functions of the soft palate.*—The most simple illustration of poltophagic and psomophagic deglutitions in man is afforded by two ways in which water can be swallowed: (*a*) it can be swallowed at once by pushing it against the soft palate by the tongue (psomophagy); and (*b*) it can be swallowed more slowly by employing movements of mastication; as soon as the water is warmed it is swallowed by a series of short deglutitions. This is more distinct if anything if the head is held downwards (poltophagy).

The following experiments were made with a view of analysing these movements and especially to demonstrate the functions of the soft palate. In each case one of the nostrils was closed and the other was connected by means of a nose-piece with a Marey's tambour and lever (Fig. 1, *a*) which readily records respiratory movements. A U tube (Fig. 1, *b*) filled with coloured water was used, one of the limbs being provided with an indiarubber tube and a mouthpiece (Fig. 1, *c*).

FIG. 1.



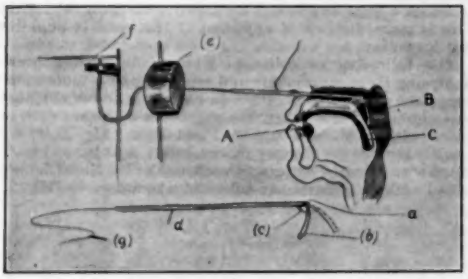
(1) A positive pressure can be produced and maintained (about from 20 to 25 cubic centimetres of water); (2) a negative pressure can be produced and maintained in the same way; (3) rapidly alternating positive and negative pressures can be produced; and (4) from 45 to 50 cubic centimetres of water can be sucked up into the mouth. Note: When the tongue is protruded only from 15 to 20 cubic centimetres can be sucked up.[2] These experiments can be produced: (*a*) During slow inspiration; (*b*) during slow expiration; (*c*) during cessation of respiration; (*d*) during hurried respiration; and (*e*) when the tongue is protruded. The movements of the soft palate consequent on the production of positive and negative pressures were recorded by means of the apparatus shewn in Fig. 2. An instrument of the size and shape of a Eustachian catheter, jointed at (*a*), the moveable portion (*b*) being attached to a thread (*c*), which passes through (*d*) a hollow handle. The instrument is then introduced into the nostril and fixed therein by a clamp. The head is fixed firmly. The thread is attached to a vertically disposed tambour (*e*), which in its turn is attached to a horizontal tambour (*f*) provided with a lever.

Fig. 3 shows: (*A*) positive pressure = forward movement of the palate; (*B*) negative pressure = backward movement of

[2] When water is sucked up by the lips one can continue hurried respirations till deglutition takes place when it appears to be inhibited till the act of deglutition is completed.

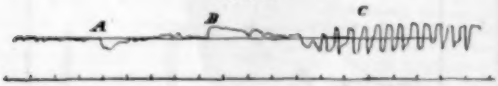
the palate; and (*C*) alternate positive and negative pressures. These experiments show conclusively: that the soft palate is capable of voluntary movements, and further that

FIG. 2.



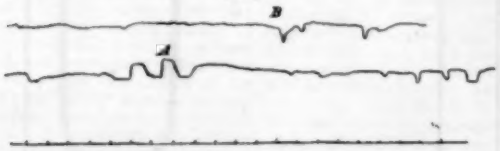
as it moves forward during the production of positive pressures and backward with the production of negative pressures, it is an active agent in producing them; and that the soft palate makes an air-tight division between the mouth and the pharynx.

FIG. 3.



The tracings in Fig. 4 are those of poltophagic and psomophagic deglutitions. 1. If the tongue is slightly protruded and hollowed water from a graduated vessel can be slowly introduced by a syphon-tube into the space between the tongue and the soft palate (posterior buccal space). When about from 10 to 15 cubic centimetres

FIG. 4



have been introduced an involuntary deglutition takes place. This can be repeated several times. (The quantity is so constant that possibly this shows the limit of the storage capacity of the posterior buccal cavity before deglutition takes place.) The tracing (Fig. 4, A) shows a forward contraction or flattening of the palate similar to that shown in Fig. 3, A. The tracing in Fig. 4, B, shows a psomophagic deglutition in which water is swallowed in a gulp above the epiglottis. Here it is seen that there is a similarity between this tracing and B in Fig. 3 (that of a voluntary suction action of the soft palate).

N.B.—It must be remembered that the excursions of the moveable limb of the instrument are necessarily very limited and that there would not be a distinction between a lifting movement (as in a psomophagic deglutition) and an increased concavity during the time that the lower border is applied to the tongue, as it is presumed to occur during the production of a negative pressure in the closed mouth.

Poltophagic mastication and deglutition.—I will describe the ingestion of a piece of currant cake as it best illustrates the phenomena of thorough mastication. During mastication there is a complex series of coördinated, unconscious, and automatic contractions of the muscles of the cheeks, the lips, the jaws, the tongue, and the soft palate, excited by afferent and efferent impulses. As the starch is transformed into dextrose it is dissolved by the saliva. If it was allowed to remain in the anterior buccal cavity it would inhibit the further action of the ptyalin. This is prevented by the action of the tongue and soft palate, alternately producing positive and negative pressures in the closed mouth. From time to time samples of the fluid contents of the anterior buccal cavity are withdrawn into the buccal passage (its further progress may possibly be arrested by the pressure of the tongue against the hard palate if it is not acceptable to the end organs in the neighbourhoods of the circumvallate papillæ), where it passes on to the posterior buccal cavity.[3] When sufficient has collected a swallowing impulse is excited. It is presumed that the tongue is pressed upwards against the hard palate so as to form a *point d'appui* for the contraction of the soft palate, to close the posterior buccal cavity, and to help in the expulsion of its contents. The mylohyoid in contracting makes the laryngeal furrows more vertical. The fluid contents are then forced out into the pharynx, the buccal cavity is reclosed, and the material is collected for the next poltophagic deglutition.[4] When the process of mastication and deglutition is completed there is nothing left but some almost dry currant skins and stones; even these may possibly be disposed of if the teeth are good enough to divide them finely.

4. *Conclusion.*—The initiative and valuable suggestions brought forward by Mr. Fletcher and Mr. van Someren have practically reopened the vitally important problems of human nutrition for renewed research and experiment. Their suggestions as summarised by Sir Michael Foster claim: (1) economy in diet; (2) an increased discrimination in food; and (3) increased efficiency and improvement in health. The question of economy has been dealt with in a comprehensive and philosophical spirit by Professor Chittenden who only appears to claim to have ascertained that the optimum nitrogen ration is less than half that of the standards hitherto accepted by physiologists. I have attempted to deal with the question from the point of view that structure implies "a crystallisation of function," and from such indications to endeavour to interpret the *raison d'être* of the phenomena under consideration.

In approaching the consideration of a subject such as this it is absolutely necessary to dismiss from the mind any idea of novelty—of a new way to ingest food. Such a claim would ignore the whole idea of evolution and of the nature of the complicated, automatic, and unconscious series of nervous, secretory, and muscular phenomena involved in the apparently simple process of mastication. It appears to me that the mere occurrence of the phenomena brought forward by Mr. Fletcher and Mr. van Someren shows, *per se*, the existence of a human faculty not made use of by men to its full extent for reasons that remain to be determined. Gegenbaur's suggestion does, I believe, give the direction in which the answer is to be found. The striking differences in the anatomical structures of the horse and the dog *sautent aux yeux*: the poltophagic horse, with its large epiglottis and muscular soft palate, swallowing thoroughly insalivated food in a current divided by the epiglottis, is provided with a very different apparatus from that of the psomophagic dog with its translucent atrophied soft palate, its small functionless (?) epiglottis, swallowing its food *en masse*. I submit, then, that the experiments and observations which I have recorded above provide a *primâ-facie* case for the opinion that man is poltophagic. His faculty for psomophagic deglutition might be due to the alteration of structure consequent on the assumption of the erect position, the shortening of the maxilla from before backwards, and the consequent vertical disposition of the soft palate. The adoption of psomophagic habits would unquestionably be facilitated by the character of the food provided by modern cookery, which is in such a state that it can be immediately swallowed. The essential difference between a poltophagic and a psomophagic deglutition is that in the first case an unconscious, automatic, and complicated series of events precedes the entry of the food into the stomach, whereas in the latter case it is introduced more or less directly. Pawlow, it may be noted, has recently pointed out the hitherto unsuspected importance of the preliminary processes of digestion in the subsequent events.

The mere presence of the poltophagic apparatus shows that it is used. A visit to a restaurant, preferably international, will reveal very remarkable differences between individuals, some being more poltophagic than psomophagic

[3] I have frequently remarked during the last two years, while there is a diminution of the contents of the mouth during mastication, that fluid can be regurgitated from the posterior buccal cavity (while it is filling), on to the dorsum of the tongue and that it is rapidly sucked back again. I have been able to repeat this experiment several times in succession.

[4] This part of the description is provisional only and depends on whether the nature of the soft palate as shown by the tracing is confirmed by actual observation of a case in which the maxilla has been removed.

and *vice versâ*. The experiments described in this part of the paper were carried out in the Institut Solway, Parc Léopold, Brussels. They were in some instances done by Professor Héger himself (I acted as the subject); the others were supervised by him. It is difficult for me adequately to express my debt of gratitude to Professor Héger for the most generous way in which he placed his skilled services and his time, together with all the resources of his laboratory and of his friends, at my disposal. It has been entirely due to his kindness, helpful suggestion, and sympathetic understanding that I have been able to put my somewhat crude ideas into the form in which I have presented them.

It will be obvious that these experiments require to be completed by observations on a case in which the maxilla has been removed so as to allow the soft palate to be seen or to permit the use of a larger instrument. A thorough examination of the anatomical, physiological, and psychological characteristics of mammals from a poltological and psomological point of view could not fail to reveal matter of great scientific and practical interest.

THE INFLUENCE OF SMALL-POX ON VACCINATION.

BY J. COOTE HIBBERT, M.D. LOND., D.P.H.,
ASSISTANT MEDICAL OFFICER OF HEALTH, NEWCASTLE-UPON-TYNE.

As the prevailing opinion amongst medical men, and even amongst medical officers of health, appears to be that a successful vaccination or revaccination of a patient suffering from a suspicious rash tells very strongly against that rash being one of small-pox, I have, on the suggestion of Mr. H. E. Armstrong, medical officer of health of Newcastle-upon-Tyne, vaccinated or revaccinated a series of patients suffering from undoubted small-pox at the hospital here. I am indebted to Dr. Armstrong for the records of several cases which I have included with those investigated by myself and in every instance Dr. Armstrong has confirmed the diagnosis of small-pox and the fact of the vaccination or revaccination having been successful.

In 20 cases of small-pox which were vaccinated or revaccinated after the appearance of the eruption 11 vaccinations or revaccinations were successful. No second attempt at vaccination or revaccination was made in the unsuccessful cases.

In the accompanying table it will be seen that in the greater proportion of the successful cases well-marked typical vaccine vesicles appeared at the site of vaccination or revaccination. These vesicles became evident from the fourth to the sixth day after the operation and ran the usual course. In some cases instead of the typical vesicle there was merely an indurated raised papule. In two cases of semi-confluent small-pox, one of which was revaccinated on the first day and the other vaccinated on the third day of the small-pox rash, the vaccine vesicles were extremely well marked.

Of the 11 successful cases ten were vaccinated or revaccinated on one or other of the first four days of the small-pox eruption. The eleventh case was not revaccinated until the fourteenth day of the small-pox eruption. Four raised indurated papules at the sites of the operation gave evidence of successful revaccination in this case. I could not detect that vaccination or revaccination when performed after the small-pox eruption had appeared had definitely any modifying influence on the rash or on the course of the disease.

The number of cases here investigated is not great, but it it sufficient, I think, to prove that vaccination or revaccination may be successfully performed during the eruptive stage of small-pox, and that the fact of vaccination or revaccination being successful in a case where there is a rash of doubtful character is no argument against that rash being one of small-pox.

Newcastle-upon-Tyne.

TABLE OF CASES OF SMALL-POX SUCCESSFULLY VACCINATED OR REVACCINATED AFTER THE APPEARANCE OF THE SMALL-POX ERUPTION.

Age.	Date of primary vaccination; evidence of same.	Date of appearance of small pox eruption.	Date of vaccination or revaccination performed after appearance of small-pox eruption.	Evidence of successful vaccination or revaccination performed after appearance of small-pox eruption.	Type of disease.
53	Infancy; two fair scars, a quarter square inch in area.	Oct. 17th, 1904.	Oct. 17th, 1904.	Vesicles at sites of revaccination on Oct. 22nd.	Discrete.
36	Infancy; one fair scar, three-eighths square inch in area.	Feb. 4th, 1905.	Feb. 4th, 1905.	Papules at sites of revaccination on Feb. 9th.	,,
44	Infancy; one fair scar, one square inch in area.	Dec. 14th, 1904.	Dec. 14th, 1904.	Well-marked vesicles at sites of revaccination on Dec. 18th.	Semi-confluent.
24	Infancy; one fair scar, two-fifths square inch in area.	July 16th, 1904.	July 17th, 1904.	Vesicles at sites of revaccination on July 22nd.	Discrete.
23	Unvaccinated.	March 15th, 1905.	March 16th, 1905.	Well-marked vesicles at sites of revaccination on March 19th.	,,
45	Infancy; one good scar, half square inch in area.	March 6th, 1905.	March 7th, 1905.	Papules at sites of revaccination on March 12th.	,,
16	Unvaccinated.	March 5th, 1905.	March 7th, 1905.	Well-marked vesicles at sites of vaccination on March 11th.	,,
15	,,	March 14th, 1905.	March 16th, 1905.	Well-marked vesicles at sites of vaccination on March 19th.	Semi-confluent.
57	Infancy; one faint scar, one-eighth square inch in area.	March 3rd, 1905.	March 6th, 1905.	Papules at sites of revaccination on March 11th.	Discrete.
29	Infancy; one good scar, three-quarters square inch in area.	Feb. 20th, 1905.	Feb. 23rd, 1905.	Well-marked vesicles at sites of revaccination on Feb. 27th.	,,
32	Infancy; one faint scar, one-eighth square inch in area.	Feb. 21st, 1905.	March 6th, 1905.	Papules at sites of revaccination on March 12th.	,,

ASSOCIATION OF MEDICAL DIPLOMATES OF SCOTLAND.—At a meeting of this society to be held on Wednesday next, May 24th, a petition will be drawn up asking the Royal College of Surgeons of Edinburgh to consider the advisability of changing the title of Licentiate into that of Member, so as to come into line with the M.R.C.S. of the English College of Surgeons.

ROYAL ASYLUM FOR THE DEAF AND DUMB POOR, MARGATE.—The Lord Mayor of London, accompanied by the Lady Mayoress and the Sheriffs and their ladies, will visit this institution on Saturday, June 17th. The Lord Mayor will unveil a memorial tablet to commemorate the final transference of the institution from its original home in Old Kent-road, London, to Margate, and the Lady Mayoress will distribute the prizes to the children.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum allorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

LIVERPOOL INFIRMARY FOR CHILDREN.

A CASE OF MULTIPLE FRACTURES IN AN INFANT.

(Under the care of Mr. R. C. DUN.)

A BOY, 15 days old, was taken to the Liverpool Infirmary for Children on account of "crooked legs and a want of power in the arms." He was the first child of a young mother and had been born at full time after a normal labour. Both parents were healthy and there was no history of syphilis or congenital defects on either side. The mother had been in good health and had met with no accident during her pregnancy. She appeared to be very careful with the baby and was positive that he had not fallen or received any injury since birth.

The child was small, pale, and delicate in appearance. On examination of the lower extremities the thighs showed distinct antero-external curvature, most marked upon the left side. A sharp, almost rectangular, inward bend of both legs was present midway between the knee- and ankle-joints causing the soles of the feet to face directly inwards. A hard and apparently bony swelling was felt encircling the shaft of the right femur slightly above its centre. The left femur showed three similar enlargements, one at the middle of the shaft, the others rather more than one inch above and below the first. Both femora were intact. The right tibia was markedly thickened just above the point of bending of the shaft; no abnormal mobility was detected. A slight thickening occurred at a corresponding situation on the left tibia and mobility was elicited at the point of curvature. The upper extremities hung listless by the sides. There was no attempt at voluntary movement and the infant did not appear to suffer pain during their examination. A bilateral club-hand of the ulnar-palmar type was present. The right forearm was normal in appearance but definite antero-posterior movement was obtained at a point opposite the centres of the radial and ulnar shafts. No bony thickening was present. The left forearm showed a slight angular curvature at its mid-point, with similar abnormal mobility, and no callus formation. The radius and ulna on both sides were apparently well developed. Slight inward bending of the right upper arm was evident. The left was straight. Abnormal mobility was present at the centre of both humeral shafts but no thickening was detected. Both clavicles were enlarged and slightly bent forwards at their mid-points. In none of the bones examined was crepitus elicited. No skin cicatrices occurred over the sites of deformity. Examination of the head revealed a soft and yielding condition of the cranial bones with all the sutures widely open. There was no tension suggestive of hydrocephalus and the circumference of the head was only 13 inches. Nothing abnormal was detected about the ribs, the spine, the pelvis, or the small bones of the hands and feet.

An x ray photograph of the trunk and extremities was taken by Dr. Thurstan Holland. It showed bony thickening of both clavicles at their centres, with slight forward curvature. There was an oblique fracture of the right humerus slightly below the middle of the shaft, the line of fracture passing from above and within, downwards and outwards. No callus formation was present. A transverse fracture of the shaft of the left humerus with no thickening or deformity was evident. Transverse fractures of both bones of both forearms at their centres were seen with no callus developed, and there was slight angling at the seat of fracture on the right side. The radius and ulna on both sides were completely formed and all the small bones of the misplaced hands were present. On the right femur an encircling ring of bony callus was evident just above the centre of the shaft. The left femur showed thickening of the upper third of the shaft with a projection of bony callus from its inner aspect. Slightly above the centre of the shaft a ring of newly formed bone similar to that on the right side appeared and below this, again, a second well-developed ring of callus occurred. The lower third of the shaft of the femur from this point down to the lower epiphyseal line was distinctly enlarged. In the leg bones the sharp inward bending of the lower halves of the shafts was evident. On the right side bony callus was present just above the angle of curvature; on the left side an incomplete transverse fracture of both bones was seen with early callus formation.

Definite evidence of the occurrence of 12 fractures was thus obtained. In seven of these firm bony union had taken place 15 days after birth. In four the process of repair had not started and in one it was only slightly advanced. From this it may be inferred that the majority of the fractures took place during birth, or possibly in the uterus before labour commenced, and that the remainder occurred during extra-uterine life. With suitable local splints the fractures of the bones of the upper extremity and the left tibia and fibula united rapidly and without deformity. The curvatures of the bones of the lower extremities remain and will demand subsequent correction. The ossification of the cranial bones progresses slowly. The child has been kept on the breast and has thriven well. He has been under observation for ten weeks and no further fractures have developed. No drugs were given.

Remarks by Mr. DUN.—Such cases of multiple fractures in the newly born are rare. They cannot be placed in the same category with those in which one or more bones are broken, usually at the epiphyseal lines, as a result of severe traumatism during labour or from accidents met with after birth. In the present case the labour was normal and no injury occurred afterwards, while all the fractures involved the shafts of the long bones. These facts, taken in conjunction with the imperfectly developed state of the cranial bones, would indicate the probable existence of some general congenital defect in bone formation. Such a condition has been described under the name of osteogenesis imperfecta or osteopsathyrosis. It is characterised by the occurrence of multiple and comparatively painless fractures of the shafts of the long bones which take place without definite traumatism. Delayed ossification of the cranial bones is a common feature. Under treatment the fractures readily unite, as in the present case. The cause of the imperfect development of bone is not definitely known. It has been ascribed to congenital syphilis, rickets, and nerve disease, but no evidence of any of these conditions was found in the present example, nor was any history of a hereditary tendency to fractures ascertained, although this has been noted in some of the recorded cases. Associated congenital deformities have frequently been present. Whatever may be the cause giving rise to this condition of congenital fragility of bone it is certain that very slight traumatisms are sufficient to produce fractures in those cases in which it is present. As examples may be mentioned such slight forces as normal uterine contraction, the passage of the fœtus through the maternal passages during normal labour, muscular action on the part of the fœtus or infant, and the ordinary careful handling of the child.

Medical Societies.

CLINICAL SOCIETY OF LONDON.

A Fatal Case of Typhoid Fever with Lobar Pneumonia due to the Bacillus Typhosus.—The Operative Treatment of Cases of Fracture of the Astragalus.

A MEETING of this society was held on May 12th, Dr. FREDERICK TAYLOR, the President, being in the chair.

Dr. SIDNEY P. PHILLIPS and Mr. B. H. SPILSBURY recorded the case of a patient, aged 20 years, who came under observation on Dec. 2nd, 1904, suffering from typhoid fever at about the tenth day. The temperature was high—105·6° F.; the cutaneous eruption was just commencing to appear; and there were evidences of a patch of pneumonia at the right apex and of hepatisation of the whole of the lower lobe of the left lung. Four days later there were signs of resolution of the pneumonia of the right apex but the

patient's condition did not improve. The abdominal symptoms of the typhoid fever were moderate in severity and tended in due course to decline but the pneumonia at the base of the left lung showed no signs of resolution. The tubular breathing persisted and the fever, cyanosis, and dyspnœa became extreme. Toxæmia and failing pulse supervened and death occurred on Dec. 11th. The necropsy showed numerous typhoid ulcers in the small intestine in various stages, but none perforated, and a few small ulcers in the ascending colon. The lower lobe of the left lung was in a state of red hepatisation and scattered throughout it were small white nodules which to the naked eye appeared to be tubercles. They were found by Mr. Spilsbury in the pathological laboratory of St. Mary's Hospital to be minute abscesses, in which were large masses of organisms—in some minute cocci retaining Gram's stain, and in others bacilli which had the morphological appearances and staining reactions of the bacillus typhosus. The remainder of the lung showed the microscopical characters of delayed resolution of a croupous pneumonia. No pneumococci or tubercle bacilli were to be found in the lung. The lung and the microscopic slides were exhibited at the meeting. Dr. Phillips, in commenting upon the case, pointed out that pneumonia occurring in typhoid fever at any period in its course was almost always due to the pneumococcus or the staphylococcus. Very few cases were on record where it was due, as in this case, to the specific bacillus of typhoid fever. Polguère of Paris had described a very similar case. In its clinical manifestations the case now recorded bore more the general characters of a case of pneumonia than of a case of typhoid fever, the pulmonary symptoms predominating. The onset of the pneumonia was early in the course of the typhoid attack, its development was rapid, and its resolution was very much delayed. These were points which were said by Polguère to be characteristic of typho-pneumonia.—Dr. E. W. GOODALL referred to the large amount of labour necessary in working out such a case as that just described. Lobar pneumonia was not common in the course of typhoid fever and generally occurred late in the disease. He thought that a typical lobar pneumonia was rare in the early stages of typhoid fever. The question of the primary infection of the lung or the kidney by the typhoid bacillus was one of great interest and he asked Dr. Phillips whether he had ever seen the lungs primarily affected by the bacillus typhosus.—Dr. HERBERT S. FRENCH said that although he was not able to add to Dr. Phillips's any other case in which typhoid bacilli had actually been found in the lung, perhaps the following notes might be of interest in that they recorded the pneumonic onset of typhoid fever in several members of the same family. The early diagnosis was pneumonia in all the cases, whilst the ultimate course was typical of typhoid fever. The notes of the cases were made independently by different persons; it was only when the medical reports came to be indexed that their similarity was recognised. A woman was taken ill with a malady which was regarded as influenza at first and then as lobar pneumonia. She was treated at home by her own medical man. The duration was too long for simple lobar pneumonia, typhoid fever was not thought of, and the death certificate was finally made out as "acute phthisis." She died towards the end of October, 1901. During her illness she was ministered to by her eldest daughter, aged 11 years. On Oct. 25th, 1901, the daughter was taken ill with what seemed to be acute pneumonia. Her chest was poulticed and three days later she was sent to Guy's Hospital as a case of lobar pneumonia. She was under the care of Dr. G. N. Pitt until she went out cured on Nov. 26th. Her lung signs were bronchial breathing, consonating râles, and pectoriloquy all over the left lower lobe, together with rhonchi over the rest of her lungs. On admission her respiration-rate was 68, her temperature was 105° F., and her pulse was 124. No crisis came. Some days later her spleen, not palpable at first, became enlarged; enteric fever suggested itself and was confirmed by Widal's test. There was no leucocytosis, the count being 14,000 per cubic millimetre. The course of the pyrexia was typical of uncomplicated typhoid fever and she recovered completely. On Nov. 21st, 1901, four weeks after the daughter had been taken ill, her brother, aged nine years, was admitted to Guy's Hospital under the late Dr. J. W. Washbourn, with a precisely similar condition to that of his sister. The left lower lobe was dull and on auscultation bronchial breathing, pectoriloquy, and crepitations were heard over it, whilst there were rhonchi scattered over the rest of the chest. There was no leucocytosis (7187 per cubic millimetre). The respiration-rate was 52, the temperature was 103° F., and the pulse-rate was 120. There was no crisis. The lung signs abated but the pyrexia continued. The spleen was subsequently palpated; typhoid fever was diagnosed and confirmed by Widal's test. The boy got well. The course of the disease was exactly like that of uncomplicated typhoid fever. On Nov. 29th, 1901, a sister to the above, aged four years, was admitted to Guy's Hospital also with crepitant râles all over the left lower lobe. The condition and the course were precisely similar to those in the brother and the sister. Widal's test was positive. The child got well. It would appear probable that the mother's "pneumonia and acute phthisis" were also pneumonic typhoid fever. The pnemonia in these cases was not proved to be due to the typhoid bacillus; but even in 1901, when these cases occurred, Dr. Washbourn gave it as his opinion that, had the patients died, typhoid bacilli would have been found in the pneumonic lung. Fortunately, the three hospital cases lived; being children, there was no sputum; there was no clinical ground for needling the chest, so that there was no means of investigating the bacteriology of these lungs. Nevertheless, the occurrence of four consecutive cases of pneumonia in one family, in three of which typhoid fever was proved by Widal's test, at least suggested that they might have been pneumonia due to the typhoid bacillus. The temperature charts were those of typhoid fever pure and simple, and not of pneumonia and typhoid fever, such as was sometimes seen. When ordinary lobar pneumonia occurred in a patient who already had typhoid fever the characteristic pyrexia of the pneumonia was, so to speak, grafted on to that of the typhoid fever; so that it was possible to recognise, on the temperature chart, the point of onset of the pneumonia and the crisis, a pneumonia chart superposed, as it were, upon a typhoid fever chart. This was not the case in the present instances. To judge by the charts alone they could not detect anything but typhoid fever. In none of the three cases examined in the hospital was there leucocytosis, a point which was also, perhaps, suggestive of the entire affection having been typhoidal.—Dr. F. H. HAWKINS expressed the belief that pneumonia was uncommon in cases of typhoid fever and in 100 cases recently investigated it had only been present in 1 per cent.—Dr. W. PASTEUR said that the evidence that a pneumonia was due to the bacillus typhosus could only be obtained by careful examination of the lung in fatal cases. His impression was that acute pneumonia in the course of typhoid fever was rare. He referred to a case in which a meningitis was due to the bacillus typhosus.—Dr. PHILLIPS replied.

Mr. J. HUTCHINSON, jun., and Mr. HUGH LETT, in a paper on the Operative Treatment of Cases of Fracture of the Astragalus, stated that in various instances of impacted fracture of the astragalus the foot remained in equinus combined with varus so that its functions were greatly impeded, the patient being unable to walk with the heel and the toes touching the ground. Where manipulation under anæsthesia failed to correct the impaction (proved by the x rays) Mr. Hutchinson and Mr. Lett advocated excision of the fractured bone. At the same time they rejected the teaching of M. Ombrédanne that all cases of fracture of the astragalus should be treated by excision, which could only be required in the exceptional instances of persistent deformity. It was suggested that in cases of dislocation of the astragalus the external malleolus should be chiselled through at its base to facilitate the reduction. A series of eight cases of fracture of the os calcis was discussed, the x rays proving that comminuted fracture of the body of the bone was the most common form, due to falls from a height. Widening of the os calcis, a band of deep ecchymosis beneath the malleoli, and the appearance of flat-foot were the chief signs apart from the conclusive evidence of the x rays. Although several months usually elapsed before the patient could walk well, the ultimate result, as proved by following the cases up after a year or two, was good. Hence, operative interference in these cases was not indicated.—Mr. W. G. SPENCER said that although radiography had been of the very greatest service in the diagnosis of fractures yet it had led to a falling off in the immediate treatment of fractures which was so important before the rigidity of muscles supervened. He thought that there should be no delay in putting up a fracture and too much stress was laid on the importance of getting a skiagram.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases.—Word Blindness.—Treatment of Disease by Intravenous Injections.

A MEETING of this society was held on May 3rd, Professor JOHN CHIENE, the President, being in the chair.

Dr. BYROM BRAMWELL exhibited two cases of Leukæmia after treatment by the x rays. 1. The first occurred in a woman, aged 28 years, who had been admitted to the Royal Infirmary two months previously. She suffered from well-marked spleno-medullary leukæmia, the spleen being much enlarged and the white blood corpuscles increased to 450,000 instead of the normal 5000 to 10,000 per cubic millimetre; 41 per cent. of these were myelocytes. Her temperature was normal but this underwent a notable rise after application of the x rays. Later, however, it slowly fell. For some days subsequently to this treatment nothing was noted but gradually a marked improvement in the patient's condition occurred. At the present time her spleen had undergone a distinct diminution from its former hypertrophied condition, the white blood corpuscles had fallen in number to 28,000, and her general health had much improved; 48 per cent. of the white corpuscles were still of the myelocyte variety. 2. The second case occurred in a boy the subject of lymphatic leukæmia; the white blood corpuscles amounted to 300,000 and the majority were large lymphocytes. After application of the x rays there was also a rise in his temperature accompanied by inflammatory reaction over the spleen. The number of leucocytes fell to the normal (8000 per cubic millimetre) under x ray treatment but a general improvement did not take place (although the spleen underwent a reduction in size), and the patient died. The prognosis of such cases under x ray treatment could not be stated. In many of the recorded cases an injurious inflammation took place over the spleen and had even resulted in death.

Dr. BYROM BRAMWELL also exhibited a most remarkable case of Gout. The patient, a man, aged 52 years, had been under the care of Sir Dyce Duckworth for some time. The patient's habits had never been such as to lead him to contract gout. On the other hand, he had developed the disease 28 years ago while living in the wilds of Australia. His first acute attack began at that time and he had suffered from two to three of these every year since. The urine had been albuminous ever since the disease commenced. The number of tophi was quite remarkable and Sir Dyce Duckworth stated that he had never seen so striking an example of gout. There were enormous masses over the metacarpals, the olecrana, the patellæ, and over the heads of the tibiæ and the fibulæ. Discharging ulcers were present on the hands and the feet, yet the patient's general condition was good. Surgeons did not recommend any operative interference in such a case.

Mr. J. M. COTTERILL showed a male patient, aged 40 years, suffering from Multiple Chondroma and Chondro-sarcoma. In early life the chondromata began to grow from the ends of the long bones. The majority had now either ossified or calcified. A very large one over the left scapula had existed for 20 years. It grew from the ribs and left the scapula freely moveable. The tumours were mostly symmetrical. An enormous tumour had, however, grown during the last five months from the right ilium and was undoubtedly sarcomatous. As operative measures were impossible x ray treatment was being given to this chondro-sarcoma and the patient thought that already the tumour was softer and more moveable.

Mr. H. ALEXIS THOMSON showed a case of Extroversion of the Bladder after Transplantation of the Ureters into the Rectum (Peters's Operation). The patient was a boy, aged nine years. The absence of the symphysis pubis made him waddle in walking. The ureters were transplanted extra-peritoneally and he had made remarkable progress, being now able to hold his urine for eight hours. The urine was rarely free from fæcal matter but no symptoms of ascending septic infection had shown themselves.

Mr. J. V. PATERSON and Dr. EDWIN BRAMWELL communicated a paper on two cases of Word Blindness. In the first case, that of a man, aged 63 years, there were complete word and nearly complete letter blindness. Numerals were read much more readily than letters. Writing was greatly interfered with, the patient being able to write correctly only about one-half of the letters of the alphabet. Right homonymous hemianopsia was present as well as some rigidity of the right arm and leg following a hemiplegia. Sensation was unimpaired, intelligence remained good, and speech quite unaffected. Blocking of the left posterior cerebral artery was thought to be the most probable explanation of the symptoms which had existed for two and a half years. The second case was that of a man, aged 64 years, who was under treatment for cirrhosis of the kidney and chronic bronchitis when it was found that he had a right homonymous hemianopsia and word blindness. The patient was an intelligent man, although his memory was very defective. He was right-handed. He understood perfectly everything said to him and spoke fluently. There was very pronounced word and letter blindness. He was able to read figures very much better than letters. Writing was very little interfered with. There was no hemiplegia or hemianæsthesia. The patient died with uræmic symptoms. At the necropsy a large area of softening was discovered corresponding to the distribution of the posterior cerebral artery. The cortex in the region of the angular gyrus was not involved.

Dr. THOMAS W. DEWAR (Dunblane) read a paper entitled "A Plea for the Recognition of the Treatment of Disease by Intravenous Injections." He said that the honour of first imagining such a thing to be possible rested with Sir Christopher Wren and detailed his first attempts in 1665 or 1659, at which the Hon. Robert Boyle and Wilkins assisted, mentioning that to Boyle belonged the honour of having first suggested its application to human beings. The work done in the following centuries was then narrated. About the last quarter of the nineteenth century a change came over the method owing to the manufacture of fine hollow needles and improvement in the apparatus. This enabled the operator to administer with certainty, safety, and practically no injury to the vessels 100, 200, or 300 injections, whereas formerly two or three might end in obliteration of the lumen, phlebitis, thrombosis, or suppuration. Dr. Dewar's experience of intravenous injections convinced him that obliteration of the tube was due to the solutions introduced to a much greater extent than to the wound of puncture; that if a large volume was to be introduced the needle must have a considerable calibre and the pressure be great. In no case should the needle after loosening the tourniquet fill the lumen of the vessel unless the injection be very small. In 1890 Baccelli injected with quinine 30 patients who were suffering from severe malaria and all recovered. In 1893 Landerer injected cinnamate of sodium and claimed good results in pulmonary tuberculosis. This treatment seemed to be powerful in early cases but was inapplicable in cases with vomicæ or mixed infection. In 1899 Gautier injected cacodylate of sodium and in 1896 Ernest Lane injected 76 syphilitic patients with a 1 per cent. solution of cyanide of mercury with an apparent cure in 50 cases. Such diseases as malignant pustule, erysipelas, ulcerative endocarditis, pneumonia, cerebro spinal meningitis, and so on, were reported as having yielded to this method of treatment. The most impressive feature in the whole history of the subject was the extraordinary vitality of Wren's original idea. For 250 years it had possessed the minds of medical men. Despite difficulties, failures, and opposition it had held its own and had steadily gained in power. The main grounds alleged against this treatment were (1) its restriction to the venous distribution; (2) injury to veins (Dr. Dewar had never met with embolism and rarely with thrombosis and had patients with good veins after 200 and 300 injections); and (3) the negative results of laboratory experiments on inoculated animals. In this department Baccelli, Behring, Cash, Washbourn, Fortescue-Brickdale, and others had worked and their results were incontrovertible for the animals all died. Dr. Dewar, however, did not think that they had any right to argue that the results obtained clinically were inaccurate or that there was no future for intravenous work in the human subject. A case of marked oral sepsis was narrated. Streptococci were present in large numbers in the discharge and antistreptococcic serum was administered but this, as well as large doses of quinine, had no effect on the condition. A single intravenous injection of formic aldehyde in physiological solution cured the patient almost immediately. A second instance was a case of tuberculous abscess of the lung in a patient with acute pulmonary tuberculosis. The cure by intravenous injection was absolute and rapid. Tubercle bacilli, sputum, and cough all disappeared. In a disease so varied as

pulmonary tuberculosis, so merciless in its progress, so defiant of all treatment, it was permissible to try anything and to cling to any method which seemed to impart a sense of control, even although the results were neither rapid nor brilliant. Dr. Dewar took exception to two statements frequently made: 1. "The constant phenomenon of the self-limitation of tubercle." He did not know of any such benignant quality clinically. If tissue resistance were strong progress was arrested or slow; if weak, progress was rapid. 2. That the presence of apical scars or nodules was proof of the curability of pulmonary tuberculosis. In a former paper Dr. Dewar had given his experience of the progress made in arresting pulmonary tuberculosis by intravenous injection of iodoform and he stated that tubercle bacilli had now disappeared from the expectoration in Cases 3 and 4 and that Case 4 had passed a medical board. Of the nine cases reported in the second paper four were now free from tubercle bacilli and the others were all doing well. As regards the *modus operandi* of iodoform in such cases three suggestions might be made: 1. That it acted as a germicide. It might act powerfully when introduced in very fine division to the minute capillaries of the lung and deposited at the very seat of the disease. 2. If this directly destructive effect was not likely, and he admitted that it was difficult to imagine one quarter or one half of a grain of iodoform injected into a human body doing much germicidally, might it not excite the cells, the micro- and macro-phages of Metchnikoff, aiding phagocytosis at the point where the defence was crumbling? Iodoform might even act as a stimulant to the living cells. 3. It was possible that iodoform underwent decomposition and resulted in the production of bodies even more powerfully destructive to germs. Iodoform in solution of ether or chloroform was easily oxidised by oxygen in the air in the presence of sunlight, x rays, or radium. A natural change would be that two atoms of iodine in iodoform would be substituted by one atom of oxygen, so producing iodoformic aldehyde, a body as yet not isolated chemically but theoretically more powerful than formic aldehyde. If this iodoformic aldehyde parted with its atom of iodine and took up hydrogen nascent formic aldehyde would be formed *in situ* and so a germicide of enormous power would act on the tubercle bacilli. The liberated nascent free iodine in the circulation was also a valuable asset. It could produce new organic iodo-substitution compounds with other bodies from which the iodine could be liberated again by a similar cycle of operations, so that the iodine would be alternately free and combined. It was therefore possible that the iodine (which formed $\frac{89}{100}$ths by weight of iodoform) might exert its bactericidal action at the seat of disease. If iodoform was not all oxidised when in ethereal solution the oxygen in the red blood cells was able to do as much as the free oxygen + radiant energy. The iodoform molecule was still capable of being transformed by reduction into methylene iodide (CH_2I_2 + HI), giving again HI which might act upon organic iodo-substitution products, setting free iodine. The methylene iodide might react upon water or be itself oxidised to produce formic acid derivatives and two of HI to go through the chemical cycle noted under oxidation. Again, if by either of these processes free iodine were liberated the older observation of the action of iodine in weak alkaline solutions might take place. In such circumstances it formed iodides and iodates, which being acidulated would again liberate free iodine. That excessively minute quantities of certain bodies are capable of profoundly changing other bodies was now well known. Thus, one part of sulphate of copper to 100,000 parts of water would destroy completely the organisms of cholera or typhoid fever in three or four hours. Such an infinitesimal dose would be absolutely innocuous to the human system if administered orally or intravenously. Dr. Dewar acknowledged that the treatment of pulmonary tuberculosis by intravenous injection was not easy at first nor was the improvement always immediate. It required care, patience, and a constant self-restraint. It was impossible to estimate the number of injections which might have to be given, thus success depended on preserving the veins. It was Dr. Dewar's custom to continue treatment for some time after the disease had become quiescent and the patient apparently well. To arrest the pernicious activity of the tubercle bacillus well established in its host must of necessity be a slow and laborious proceeding but when the issue at stake was considered the minute observance of detail and weary monotony of treatment sank into insignificance.—Dr. R. W. PHILIP, Dr. V. SHAW, Dr. T. M. BURN-MURDOCH, Dr. G. LOVELL GULLAND, and the PRESIDENT took part in the discussion which followed.

EPIDEMIOLOGICAL SOCIETY.—A meeting of this society was held on May 5th, Dr. B. A. Whitelegge, the President, being in the chair.—Dr. A. Newsholme opened the adjourned discussion on Dr. G. S. Buchanan's paper on the Spread of Small-pox around Small pox Hospitals in Relation to Aerial Convection. He criticised the conclusions as to the outbreaks at Purfleet, &c., and challenged the denial of communication between the ships and the shore as incapable of proof. He showed that, as regards Liverpool, circles drawn around the centres of greatest aggregation of spots gave results in no way corresponding with those of circles drawn round the hospitals. He disputed the value of Dr. Buchanan's method of calculating incidence by the percentage of houses invaded and showed that by taking cases it would appear to be safer to reside within a quarter than half a mile, and within than beyond a mile, of a hospital, and so taken Dr. J. C. Thresh's figures showed the like absence of gradation save in the converse of what it was sought to prove. Nor could he admit the contention that negative evidence was of no value even if all the same conditions were present. 20 per cent. of the consumers of a suspected milk would be a minority, but their contracting scarlet fever would be deemed positive evidence, unaffected by the negative evidence of the remaining 80, and in 80 per cent. of small-pox hospitals the Local Government Board could find no evidence of aerial convection. On Dr. Buchanan's hypothesis the wind carrying the infection must have always been east in the case of one hospital and west in that of the other. He did not deny the fact of aerial convection of small-pox any more than of scarlet fever or other infectious diseases, but it was in respect of small-pox only that it was claimed as the dominant factor. Personal infection, direct or by means of fomites, should be excluded before its spread was ascribed to aerial conveyance and Dr. Thresh admitted the occurrence of surreptitious communication, though Dr. Buchanan denied it. Negative evidence must always be rigidly tested and secondary cases need not be in the same house. Looking at the distribution of small-pox on the eastern borders of the metropolitan area it would have been quite possible for the epidemic at Purfleet and Grays to have broken out had there been no ships in the river. If personal communication must be invoked to explain the spread at great distances why not in the vicinity also. The areas of the zones and *ceteris paribus* the populations were as the squares of the distances; if therefore the incidence decreased directly it would be relatively greater. However conveyed, the same laws would govern the gradation of incidence so that this proved nothing, and in no case had the personal mode been excluded or the aerial proved. Dr. Buchanan insisted on the constant detection of cases at Purfleet and the paucity of missed ones but if found these were not missed. Dr. Buchanan alleged as evidence of aerial convection the fact of the epidemic around the hospital but the first cases occurred before the hospital was opened and the subsequent ones appeared around the original focus, as in St. Pancras, where there was no hospital.—Dr. J. Niven described Dr. Newsholme's circles as mere jugglery and considered it quite needless to prove that hospitals spread the disease. At Oldham he found the proportion of houses attacked in the successive zones around a common lodging-house in the centre of the town where a case had occurred to be 4·7, 1·5, 0·35, and 0·42, and around the hospital 0·42, 0·43, 0·53, and 0·22. While there were many acute cases in the hospital two outbursts of untraced cases were observed in January and February numbering respectively six and 21. During the former the wind was variable but prior to the latter it blew for a fortnight from the hospital towards the locality of the outbreak which could not be traced to any other source. At Manchester there was on one side of the Monsell Hospital a brook not crossed by traffic but a number of cases of untraced origin appeared simultaneously on the other side after the wind had been blowing in that direction, and both there and at Oldham the removal of acute cases checked the spread of infection from the hospitals.—Dr. E. W. Hope said that no one doubted the influence of hospitals but the question was whether it was due to aerial convection or to the causes that operated elsewhere. It had been ascribed to "acute" cases but all were acute at first, and the unvaccinated were highly, in fact most, infectious

during scabbing and convalescence. Small-pox was intensely infectious, and, according to Mr. W. H. Power, the mildest cases and concealed cases contributed largely to its spread. Dr. Buchanan had given the evidence on both sides, though insisting most strongly on aerial convection, but Dr. R. J. Reece had from first to last absolutely ignored all other factors and conditions, otherwise his report would have been convincing. He admitted the accuracy of Dr. Reece's maps but not his conclusions, for if zones were drawn round a hospital that had not been used for small-pox for many years the district would be seen to have suffered more severely and the gradation to have been more marked than around the small-pox hospitals. In Liverpool concealment was practically unknown, false information being penal under local Acts. According to Dr. Reece, the small-pox incidence was heavier around the Fazakerly Hospital than around that of Priory-road, though the former site, consisting of an open space of 130 acres to which further additions had been made, was pronounced by three Local Government Board inspectors to be the best possible, but Dr. Reece suppressed all evidence against his contention. Priory-road was the least desirable but one case only occurred in the quarter-mile zone with a population of 500. In the vicinity of Park-hill hospital 12 distinct outbreaks occurred before the hospital was opened and nine after the reception of patients. Why, he asked, should these be ascribed to the influence of the hospital, while the 12 were evidently independent of it? Besides, four of the nine were proved to have been infected elsewhere. In fact, considerably more than half the cases occurring within a mile of one or other of the hospitals were traced to infection in other places, 54 had been treated as chicken-pox, others travelled in trams, worked in shops and factories, attended the out-patient departments of hospitals, or roamed the streets, but all who resided within a certain distance of a hospital were referred by Dr. Reece to its influence and ascribed by him to aerial convection, even when his attention had been called to the fact that they had been clearly proved to be members of groups or series of cases of simultaneous or consecutive infection from known sources. His maps of the Fazakerly area showed a maximum of cases several months after the maximum occupation of the hospital, and, indeed, when it had been for some time empty and aerial convection could no longer be entertained.—Dr. J. C. McVail remarked that even Dr. Newsholme agreed that small-pox hospitals should not be placed in thickly peopled districts but he (Dr. McVail) argued that negative instances did not disprove the fact of hospital influence any more than the occurrence of cases of small-pox or scarlet fever in slums without the diseases spreading proved them not to be infectious. Referring to Dr. C. B. Ker's experience of Edinburgh, he pointed out that the inmates of schools and asylums were not fairly comparable with the general population, being most recently vaccinated or of an age at which susceptibility was greatly lessened. Fever hospitals had rarely been found a danger to the locality, nor did small-pox appear to spread when a hospital was occupied by convalescents only; indeed, where the cases were of the ordinary character aerial convection did not always follow. Dr. G. Reid had been unable to prove it in any one of the 17 hospitals in Staffordshire.—The President said that all were agreed as to aerial convection at short distances, for all infection other than by inoculation or ingestion was through the air, but every outbreak in the crowded quarters of towns afforded instances of aerial convection, of personal infection, and of the non-extension of the disease even from virulent and concealed cases. It was most reasonable and safest to admit and to provide for every form of communication, of which aerial convection was one, in all diseases, though perhaps playing a more important part in small-pox than in others and, judging from the analogy of other particulate matter, by no means confined to comparatively short distances.—At the suggestion of Dr. McVail it was agreed that members who had been unable to take part in the discussion might send in writing any remarks which they might wish to make, with a view to their reproduction in the Transactions.

BRITISH GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on May 11th, Dr. William Alexander, the President, being in the chair.—Dr. George H. Burford showed a specimen of Ectopic Gestation occurring simultaneously in both Fallopian tubes removed at the end of the second month of pregnancy from a multipara, aged 33 years. There was a clear history of regular menstruation for three years antecedent to the present gestation. Examination showed the parts removed to consist of two tubal sacs, each with the corresponding fœtus, from the right and left side respectively. The patient made a good recovery.—The President remarked that the condition was a very rare one and that he did not remember having seen a similar specimen.—Dr. H. M. Macnaughton-Jones showed: (1) specimens of Double Salpingo-ovaritis, the result of gonorrhœa; and (2) the Contents of a Uterus removed for Suppurative Endometritis, the result of gonorrhœa.—Dr. Burford and Dr. James Johnstone communicated a paper on Transfusion, Subcutaneous and Intravenous, in Gynæcological Practice. Dr. Johnstone dealt with the question from the historical, physiological, and pathological aspects. He said that when a large quantity of blood was withdrawn from the circulation the blood pressure fell but might soon regain its normal height owing to increased peripheral resistance due to the action of the vaso-motor centre. It was only after very severe hæmorrhage that the pressure fell rapidly and death would follow unless means were taken to prevent failure of the circulation. Both hæmorrhage and shock were marked by a fall in blood pressure, due in the former case to depletion of blood and in the latter to diminished peripheral resistance. The objections to using blood in transfusion were (1) the difficulty of obtaining it quickly and in sufficient quantity and (2) the difficulty of preventing it from clotting. Normal saline solution, on the other hand, was readily prepared, the process of transfusion was free from danger, the quantity might be varied at will, and the process might be repeated if necessary.—Dr. Burford then gave a report of 25 cases, post-operative and puerperal, in which transfusion of normal saline solution had been employed. In the post-operative cases where the indications were those of shock or hæmorrhage the patients almost uniformly recovered. Where the indications were those of sepsis the transfusion was uniformly of no avail. Among the obstetric cases, one of urobilinuria during pregnancy was cited where transfusion also proved useless, and one of puerperal hæmorrhage during acute mania where the procedure was successful. The quantity of fluid varied, being in one instance as much as seven pints given by the intravenous method at one sitting. An instrument for intravenous or subcutaneous transfusion was demonstrated.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on May 4th, Mr. G. Morgan, the President, being in the chair.—Dr. W. J. Rowland showed a boy, aged 12 years, with Congenital Heart Disease, and the heart on the right side of the chest; also a case of Tachycardia brought on by the use of Sandow's exercise.—Dr. D. G. Hall showed a case of Infantilism, aged 25 years, suffering from splenic leucocythæmia; also a case of Bronchiectasis with marked pulmonary arthropathy.—Dr. Walter Broadbent showed a woman, aged 55 years, suffering from Progressive Bulbar Paralysis; also a child with Double Congenital Dislocation of the Hips.—Dr. E. Mackey showed some Hydatid Cysts passed by the Urethra by a man with a tumour in the left hypochondriac region. He discussed the treatment, recommending turpentine. He also showed specimens from a case of Broncho-pneumonia, Ulcerative Endocarditis, and Meningitis, all caused in succession by the staphylococcus pyogenes aureus.—Mr. A. H. Buck read a paper on Appendicitis, recommending removal of the appendix after any attack, however slight. He remarked on the varying position of the appendix, from high up in the right loin down to Douglas's pouch and even to the left iliac fossa. He emphasised the importance of a rectal examination in all suspected cases. He discussed the use of blood examinations. His treatment was to put the patient to bed and to give a dose of castor oil and opium at once, to give a fluid diet, to apply hot flannels to the abdomen, and to use enemata; if not better, to operate on the third day but if possible to leave the operation for three weeks, when an incision from one to two inches long would suffice.—The paper was discussed by the President, Mr. C. H. Bryant, Dr. Broadbent, Mr. T. J. Verrall, and Mr. H. H. Taylor.

SOUTH-WEST LONDON MEDICAL SOCIETY.—A meeting of this society was held on May 10th, Mr. E. F. White, the President, being in the chair.—Mr. W. Sampson Handley gave a lantern demonstration on the Pathology and Treatment of Cancer of the Breast. He brought

forward evidence to show that cancer of the breast was disseminated mainly by actual cancerous growth along the fine lymphatic vessels—a process to which he had attached the name "permeation." The importance of this process had escaped notice because after a time the cancerous lymphatics were obliterated by "perilymphatic fibrosis," an inflammatory process which destroyed the cancer cells and led to the substitution of a fibrous cord for the original lymphatic. Nodular metastases at isolated points appeared to arise from the local failure of this curative process. In discussing visceral dissemination Mr. Handley drew especial attention to the frequent occurrence of invasion of the abdomen by direct cancerous infiltration of the abdominal wall in the epigastric angle, a point where the parietes were especially thin and weak. He deprecated the extreme removal of skin practised by some operators but advocated wide removal of the deep fascia, especially in the epigastric region. His remarks formed a brief summary of the Hunterian lectures on the same subject which recently appeared in abstract in THE LANCET.[1]

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on May 5th, Dr. Adolph Bronner being in the chair.—The following cases, pathological specimens, &c., were shown:—Dr. A. E. L. Wear: Uterus removed by Vaginal Hysterectomy for Early Malignant Disease.—Mr. E. Ward: Carcinoma of the Rectum, with a Secondary Nodule just above the growth. —Mr. B. G. A. Moynihan: (1) Papillomatous Ovarian Cysts, four specimens; and (2) Dermoid Cysts, Bilateral; one of the cysts had a twisted pedicle and a broad omental adhesion was also twisted.—Dr. W. Bertram Watson and Dr. A. G. Barrs: A case of Widespread Ulceration involving skin and connective tissue of tuberculous origin, with complete recovery.—Dr. E. F. Trevelyan: (1) A specimen showing an old Apoplectic Cyst in the Pons; and (2) a case of Chorea in a boy, aged 14 years, complicated by severe paralysis, during which the choreic movements at first disappeared but subsequently returned.—Dr. Trevelyan and Mr. H. Littlewood: A case of Spastic Paraplegia in which the obturator nerves were divided for the relief of severe spasm with marked relief.—Dr. H. de C. Woodcock and Dr. Trevelyan: A Brain from a case of Masked Tuberculous Meningitis complicating Pulmonary Tuberculosis.—Dr. J. B. Hellier: (1) Sellheim's Obstetric Phantom; and (2) Ruptured Uterus removed by Hysterectomy.—Dr. T. Churton and Mr. Littlewood: Scirrhous Cancer at the Junction of the Pancreatic and Biliary Ducts.—Mr. Littlewood: (1) Specimen of an Enlarged Prostate associated with Calculus; (2) five specimens of Cholecystectomy; and (3) Chronic Salpingitis simulating Appendicitis.—Dr. W. H. Maxwell Telling: A case of Diffuse Sclerodermia complicating Raynaud's Disease and following Amputation of the Breast.—Mr. R. Lawford Knaggs: (1) Necrosis of the Clavicle (specimen and patient); and (2) Penis and Urethra, including the Prostate, removed for Carcinoma commencing at the Bulb.—Mr. G. Constable Hayes (with Mr. W. H. Brown): A case of Extensive Tuberculous Disease after Treatment with the X Rays.—Dr. Barrs read a paper on Supraclavicular Adenopathy and its Significance, with cases.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY. —The closing meeting of the session of this society was held on May 8th, Professor R. Muir, the President, being in the chair.—Dr. J. Walker Downie showed as a fresh specimen a Thyroglossal Cyst and a Simple Thyroid Cyst removed from the same patient. Microscopic sections were shown by Dr. J. H. Teacher.—Dr. Teacher read, for Dr. W. L. Reid, the history of a Large Solid Tumour of the Ovary and demonstrated the tumour and sections prepared from it. The patient was 83 years of age; the tumour was noticed five and a half years ago. Operation was undertaken on account of rapid increase of the growth and the development of ascites within the last six months. The patient made an excellent recovery. The tumour weighed 16 pounds 2 ounces. Part of it showed the structure of a hard fibroma but the rest—the larger portion—was spindle-celled sarcoma. —Dr. J. G. Connal read notes of, and showed Sections from, a case of Epithelioma of the External Auditory Meatus. The patient was an old man. Radical operation was out of the question and the patient returned home, where he died somewhat unexpectedly with symptoms suggestive of septic mischief within the cranium. There was no post-mortem examination. Sections of material removed for diagnosis showed the structure of squamous epithelioma. A remarkable feature was the absence of pain.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.—The last meeting of the session of this society (a clinical evening) was held on May 10th.—The following were some of the cases shown:—Dr. J. O. Symes: A case of Acute Rheumatoid Arthritis.—Dr. Carey P. Coombs: An infant with an Abdominal Tumour.—Dr. F. H. Edgeworth: (1) A case of Head-nodding and Nystagmus; and (2) a Cretin showing the result of Thyroid Treatment.—Dr. J. J. S. Lucas: (1) A case of Macroglossia; and (2) a case of Unexplained Œdema of the Legs.—Dr. W. Kenneth Wills: (1) A case of Linear Nævi; (2) Lupus cured by the X Rays; (3) Adenoma Sebaceum treated by High-frequency Spark; (4) Symmetrical Dystrophy of the Nails; and (5) Rodent Ulcer cured by the X Rays.—Dr. H. Waldo: (1) A case of Tuberculosis Cutis (generalised); (2) a case of Tinea Circinata; (3) a case of Lupus Vulgaris; and (4) a case of Chiropompholyx.—Mr. F. R. Cross: Some cases of Orbital Tumour.—Mr. J. Paul Bush: (1) A case of Post-pharyngeal Abscess; and (2) a case of Pyonephrosis of 11 years' standing. —Dr. J. A Nixon: A case of Multiple Nævi with Pigmentation.—Dr. J. Michell Clarke: A Lesion of the Fifth Cervical Root.

LARYNGOLOGICAL SOCIETY OF LONDON.—A meeting of this society was held on May 5th, Mr. Charters J. Symonds being in the chair.—Dr. Pinkus of Warsaw, in the absence of Dr. Heryng, exhibited the workings of a New Inhaler.—Sir Felix Semon showed an Atomiser for the application of fluid vaseline to the mucous membrane.—Dr. H. L. Lack showed an interesting case of Angioma of the Palate and Dr. R. H. Scanes Spicer one of Osteomyelitis of the Frontal Bone.—Mr. Symonds showed a case of Total Extirpation of the Larynx.—Dr. H. J. Davis showed a case of Ulceration of the Pharynx associated with left facial paralysis in a man, aged 47 years.—Dr. J. Dundas Grant showed a case of Ulcer of the Pharynx which, in spite of its gummatous appearance, was considered to be epithelioma.—Cases were also shown by Dr. J. Donelan, Mr. P. R. W. de Santi, and Mr. E. B. Waggett, that shown by the last named gentleman being a Bleeding Polypus of the Septum in a boy.

[1] THE LANCET, April 8th (p. 909), 15th (p. 983), and 22nd (p. 1047), 1905.

Reviews and Notices of Books.

A Student's Text-book of Zoology. By ADAM SEDGWICK, M.A., F.R.S., Tutor of Trinity College, Cambridge, &c. With 333 figures in the text. London: Swan Sonnenschein and Co. 1905. Pp. ix.–705. Price 21*s*.

THIS, the second volume of Mr. Sedgwick's text-book, deals with vertebrates and with amphioxus only. The rest of the chordata (tunicates, and so on) will in due course be treated of in a third volume. Consisting as the volume does of so many pages it will be inferred, and correctly inferred, that the author's treatment is fairly exhaustive. There is all the information that the student, and even the advanced student, requires about the anatomy and the classification of vertebrated animals. Moreover, all the salient facts are illustrated by numerous figures in the text. We know of no English text-book of vertebrates that is so full as that which we notice in this column.

Mr. Sedgwick carefully guards himself in his preface from criticism against what might, he thinks, appear to be anti-evolutionary views. The temperate and non-dogmatic way in which he discusses affinities between various groups and families of vertebrata is very far removed indeed from a denial of evolution which hardly any zoologist of to-day would venture to make, least of all Mr. Sedgwick, whose own original investigations have had so important a bearing upon the validity of the general theory. What he does say, and with some emphasis, in which we cordially agree, is that phylogenetic trees so confidently expected some years ago become harder and harder to frame as new facts are discovered. The very problem of problems,

so far as the present volume is concerned—viz., the origin of vertebrates themselves—is so far from solution that hardly any two zoologists can agree as to fundamental structures upon which to build a reasonable hypothesis. It might fairly be said, though with some mixture of metaphor, that most phylogenetic trees are convenient ladders for their authors "to climb down."

It is highly instructive to observe the views taken by Mr. Sedgwick as to more special cases of affinity. For he is one of a rapidly decreasing group of zoologists who are not in any sense of the word specialists but whose investigations have dealt with many groups and with many general problems. A zoologist of this kind is likely to take a saner and more comprehensive view of a given question which to the specialist appears of greater importance than perspective allows. On a question of bird affinity, for instance, the last person whose opinion is worth consideration is an ornithologist. The position of hatteria in the zoological series offers a fair test of zoological sobriety. Professor Huxley, who was well acquainted with that reptile, regarded it as "a lizard and nothing but a lizard," to quote as accurately as we can from memory. Later research has seemed to many to remove it from that settled position and to put it among ancestral reptilian forms. But that later zoological research to which we refer here has been in the hands of "bone and skin men" who speak disrespectfully of viscera and cannot grasp the fact that a dried skeleton does not represent all that can be learnt of an animal's anatomy. Mr. Sedgwick, balancing fact with fact and eschewing preconceived notions save those derived from a study of anatomy, does not see in hatteria so basal a form as we are led to regard it by some—indeed, we fear many. Geology appears to him to disprove any suggestion that tortoises have emanated from a reptile like hatteria. It may well, we think, be urged that the existing knowledge of the anatomy of lizards is so much in need of increase that speculations upon hatteria are distinctly "previous."

Though Mr. Sedgwick is, on the whole, in accord with Professor Huxley as to hatteria, he is not by any means a follower of the master in the origin of mammals. Professor Huxley taught very distinctly that of existing animals amphibia bear the closest resemblance to mammals. But of later years the opinion has been gaining force that it is among reptiles that we are to look for the "pro-mammal." With this view Mr. Sedgwick associates himself and here, again, we are in thorough agreement with him. But in all these speculations what we want is, as Goethe said, "light, more light."

To write an account of all vertebrate animals is at the present day an extremely notable achievement. Nor is it likely that so comprehensive a work could appear without some trifling errors. But there are not many. The only one that we have noticed is the statement that the New Zealand apteryx possesses no oil gland, so constant an organ in birds. It happens to be furnished with a particularly large one. This, however, is a blemish which serves to accentuate the general symmetry of the work.

Malignant Disease of the Larynx (Carcinoma and Sarcoma). By PHILIP R. W. DE SANTI, F.R.C.S. Eng., Surgeon to the Throat, Nose, and Ear Departments, Westminster Hospital (late Senior Assistant Surgeon, Westminster Hospital); Lecturer on Disease of the Throat, Nose, and Ear, Westminster Hospital Medical School. London: Baillière, Tindall, and Cox. 1904. Pp. 107. Price 4*s*.

IN Mr. de Santi's book great stress is laid upon the distinction, first made by Krishaber in 1879, between malignant disease affecting the true vocal cords and their neighbourhood and malignant disease appearing in the epiglottis and aryepiglottic folds. When arising in the former situation (or intrinsic as Krishaber called it) the lymphatic glands are not affected until after some time has elapsed, while in the other variety (extrinsic) the lymphatic glands are early involved. The practice advocated in this work is based chiefly on this very important distinction. The author describes the various manifestations of the disease, their symptoms and complications and then discusses the principles of treatment. Mr. de Santi is strongly of opinion that thyrotomy is the safest and most satisfactory method of dealing with nearly all those forms of carcinoma of the larynx which are suitable for operative interference. The book is clearly and carefully written and it will give a good idea of the subject to those medical men who have not devoted much attention to malignant diseases of this organ. When a second edition is called for we hope that the author will see his way to provide some diagrams and illustrations which would serve to enhance the value of the work for the ordinary reader, and we would further suggest that the utility of such a work as this would be increased by bibliographical references to the opinions and cases quoted.

An Introduction to Physiology. By L. A. HODGKINSON LACK, M.B., Ch.B. Edin. Edinburgh and London: William Green and Sons. 1904. 8vo, pp. 210. Price 8*s*. net.

THIS volume is of the nature of a scheme or syllabus which will prove of service to those who are attending a course of physiological lectures and has the advantages and disadvantages of such a treatise. The advantages are that the more important facts of physiology are brought before the student in an orderly and compendious form with such additions as he may have jotted down in the laboratory or the class room on the blank pages with which the book is interleaved. The disadvantages are that it presents these facts in an interrupted and fragmentary form, leading him to suppose that he has mastered the whole subject, and, in addition, that, however the author may disclaim the intention of making his treatise subservient to cramming, it becomes inevitably used for that purpose by the indolent and inattentive. It no doubt saves much trouble to the student to learn the tables representing the differences between albumin and globulins, but the danger is that he simply acquires the facts by rote and omits to perform the experiments on which they are founded.

The following are a few of the notes which we have made in examining the work. The introductory chapter on Histology, giving the mode of preparing animal tissues for the microscope, is very satisfactory and useful. The modes here given of demonstrating Nissl granules and of iron in cells as well as the stages, 25 of which are given by the author, of staining cells with hæmatoxylin and eosin, are not often given so well in histological works. In the description of the structure of muscle some confusion is created by the statement that "in the middle of the light stripe is Hensen's line." It should be in the middle of the dark stripe. The results of section of a spinal nerve and its roots are rendered clear by an intelligible diagram. An explanation is required in the section on nerve of various terms, such as "diphasic" and "commutator." In describing the sounds of the heart Dr. Lack attributes the first sound very properly to the sudden tension of the auriculo-ventricular valves but remarks that the ventricular contraction may *possibly* aid in its production, a view that can hardly be sustained on the well-established evidence that it is still distinctly heard after excision of the heart and on the evidence obtained by Wintrich with his resonators. In the section on lymph the author states that the cause of the lymph flow is, amongst other factors, muscular contraction; it should, we think, have been added, aided by the numerous valves contained in

the lymph vessels. The special senses are very briefly described and the reproductive system and development are more fully given. The work would be improved by the introduction of a few more experiments and also of an index.

The Surgery of the Head. By BAYARD HOLMES, B.S., M.D., Professor of Surgery in the University of Illinois; Professor of Clinical Surgery in the American Missionary College, Chicago; Attending Surgeon to the Chicago Baptist Hospital. London: Sidney Appleton. 1904. Pp. 569. Price 12*s.* net.

THIS is the first volume of a text-book of surgery and therefore we must consider it as a part of a larger work. The author tells us that it has been his endeavour to discuss at greatest length those conditions which are most frequently met with and the next share of attention is given to conditions rarer but requiring instant relief, and thus the reader is not given a false idea of the relative importance of the different subjects. Dr. Holmes does not tell us how many volumes he intends to write to complete his text-book of surgery but we may express the hope that the succeeding volumes will be as good as the one before us. The author writes in a pleasant, simple style and his explanations are clear. There are many statements which we might controvert but on the whole the teaching is that which is generally accepted. We are pleased to see that many illustrative cases have been inserted which assist greatly in enabling readers to understand the subject. Every case given demonstrates some definite point in the diagnosis or the treatment. The illustrations are useful, the coloured plates being especially good. The reader will find in this book that which he is most likely to need in actual practice and we consider, therefore, that the work is more likely to prove of use to the qualified practitioner than to the student working for an examination.

A Monograph of the Anopheles Mosquitoes of India. By S. P. JAMES, M.B. Lond., Captain I.M.S., and W. GLEN LISTON, M.D. Glasg., Captain I.M.S. With 15 coloured plates. Calcutta: Thacker, Spink, and Co. 1904. Pp. 132. Price 24*s.* net.

MONOGRAPHS and other kinds of books upon mosquitoes are not by any means rarities on the shelves of libraries and in the offices of journals in these days, the sudden and increasing output of such publications being, of course, due to the recent acquirement of knowledge upon the history and the causation of malaria. Indeed, this kind of literature has but one serious rival—memoirs upon the histological nature of cancer. But while the student of cancer contents himself with copious memoirs in scientific journals the historian of mosquitoes is rarely content with anything under an expensive and separately published monograph. It is to the most recent of this plenteous series that we now desire to direct briefly the attention of naturalists and medical men. The principal feature in this work is its limited, but within limits exhaustive, character. The way to accumulate this kind of knowledge is not, in our opinion, to be brought about by a confused and random collection of facts and notes from every quarter of the globe but by concentrating activity upon a limited section at a time. This is exactly what the authors have done. Their contribution to entomology is neatly rounded and polished. No doubt it is not actually exhaustive. Future hunting will discover more species of the anopheles in India. But such discoveries can be added on to the present work which, while representing current knowledge, is a platform from which an advantageous start may be made. The veriest novice in zoology could hardly fail to identify from the clear descriptions and from the elaborately coloured plates the mosquitoes of this genus which happened to fall in his way. The descriptions are very full and the plates represent a great enlargement from the actual size. An introductory plate, which represents the "skeleton" of the insect with names written clearly against every joint and every vein, renders it easy to comprehend the ensuing and coloured figures. It is to be hoped that the authors will continue their work and will extend their field of labour to other genera of mosquitoes and to other countries.

LIBRARY TABLE.

A Woman's Words to Women on the Care of their Health; and *The Mother's Guide to the Health and Care of her Children.* By MARY SCHARLIEB, M.D., M.S. Lond. London: George Routledge and Sons. 1905. Pp. (each) 164. Price of each 1*s.*—The first edition of the first of these volumes appeared in 1895; the book has been thoroughly revised and is now published at one-sixth of the cost of the first issue and as a companion volume to "The Mother's Guide to the Health and Care of her Children." Both the volumes are well and carefully compiled and will spread much useful knowledge especially concerning the laws of health and the normal functions of the body. Mrs. Scharlieb is evidently in favour of universal circumcision, for under the heading of paraphimosis she observes: "If all male babies were carefully circumcised this accident would not occur."

Contribution à l'Etude de l'Intoxication d'Origine Ophidienne. (A Contribution to the Study of Snake Poisoning.) By Dr. VITAL BRAZIL. Paris: A. Maloine. 1905. Pp. 26.—Dr. Vital Brazil, who is director of the Institut Sérothérapique of San Paulo in Brazil, states that almost all the poisonous snakes of Brazil belong to the family of crotalidæ and to the two genera lachesis and crotalus. Of the former genus there are several species but of the latter there is only one—namely, the crotalus horridus or rattlesnake. Dr. Brazil describes at some length the method of keeping snakes in captivity, the extraction of the venom, and the preparation of antitoxic serum by the inoculation of horses and mules. The antitoxic serum obtained by inoculation of lachesis venom is not antidotal to crotalus poisoning and *vice versâ*.

Dental Surgery for Medical Practitioners and Students of Medicine. By A. W. BARRETT. Fourth edition. London: H. K. Lewis. 1905. Pp. 159. Price 3*s.* 6*d.*—That this book should have reached a fourth edition seems sufficient proof of its utility to the busy medical practitioner. We rather hoped in a new edition for a clear account of the importance of oral sepsis in regard to disease and the necessity of impressing upon practitioners the danger of retaining in the mouth septic teeth. The author seems to lay too much stress upon the retention of temporary molars and his dictum that "temporary molars should never be extracted save as a last resource and where every attempt to relieve pain by other means has failed" is likely to lead to the retention of many teeth that would be far better away from the mouth. In another edition, too, we should like to see more explicit directions on the cleansing of the teeth and more remarks on the "Prevention of Caries."

The Horse: Its Care and Management. By HENRY E. FAWCUS. Edited by T. W. SANDERS, Editor of *The Profitable Farm and Garden.* Illustrated. London: W. H. and L. Collingridge. Pp. 127. Price 1*s.* 6*d.*—This little book is No. 9 in a series known as "The Profitable Farm and Garden Handbooks." Mr. Fawcus is a well-known authority on horses and the book is written to meet the requirements of people who own light and heavy draught horses. The author deals with the various breeds of horses and ponies, with the food question, with ways of feeding, with breeding and grooming, with the general care and

management, and with the common ailments of horses. We are glad to see that Mr. Fawcus advocates that a supply of water should be always kept in a horse's stable. A chapter is devoted to the subject of stabling. The book is illustrated with drawings of the various breeds of horses. It is an attractive volume in which those who have the care of horses will find much practical and useful information. The final chapter is devoted to the donkey.

An Introduction to Pharmacognosy. By SMITH ELY JELLIFFE, M.D., Ph.D., Professor of Pharmacognosy and Instructor in Materia Medica and Therapeutics in Columbia University, New York. Fully illustrated. London, Philadelphia, and New York: W. B. Saunders and Co. 1904. Pp. 265. Price 10*s.* 6*d.* net.—This work has been prepared with the hope that it may meet the needs of students. Special emphasis has been laid on the microscopic rather than the macroscopic characters of drugs, although the latter are not neglected, and considerable attention has been given to the description of drugs in powdered form. In general features it resembles the book published in this country in 1903 by Mr. Greenish. The drugs studied in detail have been selected as those most typical of general drug characters. With the knowledge acquired from the types given the student should be equipped to pursue individual research of an economically practical nature. It is a book which will appeal to the druggist rather than to the student of medicine. The illustrations are excellent and the print and the paper of the book are all that can be desired.

Alcoholic Poisoning and Degeneration. By Professor G. BUNGE, M.D., Ph.D. London: A. Owen and Co. Pp. 27. Price 6*d.* net.—In this pamphlet Dr. Bunge advocates the total prohibition of alcoholic drinks. He lays particular emphasis on the aspect of the degenerating effects of alcohol and sums up the results of his statistical researches as follows: "As a rule, where the father has been a drinker, the daughter loses the power to suckle her children, and the capability is irrecoverably lost to all future generations. The incapability of nursing is no isolated phenomenon. It is accompanied by other symptoms of degeneration, in particular by a want of power to resist the inroads of disease of all kinds: nervous disorders, tuberculosis, decay of teeth. The children are insufficiently nourished, and so from generation to generation the work of deterioration goes on, leading at length, after endless suffering, to the ultimate decay of the race." He urges the most radical measures of reform. He writes that "no one can bring forward any scientific argument against the claims of abstinence and, in the long run, no power on earth will be able to withstand the demands of science; the whole history of the world teaches us this lesson."

The Book of the Potato. Illustrated. Edited by T. W. SANDERS, F.L.S., F.R.H.S., editor of *Amateur Gardening.* London: W. H. and L. Collingridge. 1905. Pp. 222. Price 2*s.* 6*d.* net.—All those who cultivate the potato will find this volume a useful guide on many points, and it is well worthy of careful perusal. The editor deals in turn with the history and the botany of the potato plant; with soils and their treatment; with manure and manuring; with how to propagate the tuber by seed, cuttings, eyes, and grafting; with how to treat the "sets" or "seed tubers" for planting; with the systems of planting; with how to force potatoes for early use and to grow them for exhibition; with lifting, storing, and marketing; with how to rear new sorts; and with the pests and diseases of the tuber. At the end of the volume there is a descriptive catalogue of 270 varieties. A feature of the book is an account of the practical operations necessary for planting and storing the tubers.

JOURNALS AND MAGAZINES.

The Practitioner.—A very interesting and speculative article upon Functional Insanity by Dr. Robert Jones is one of the best features in the May issue of this journal. Dr. H. Batty Shaw contributes a comprehensive and careful review of recent investigations on the physiology and the pathology of secretory tissues and Dr. J. M. H. Macleod in like manner treats of advances in dermatology. His article contains a valuable description of the x ray treatment of ringworm of the scalp with some convincing statistics from French authorities by whom the method has been more widely employed than has yet been the case in this country. Mr. Hugh M. Rigby writes on the Operative Treatment of Fracture of the Patella.

Journal of Comparative Pathology and Therapeutics.—The March number of this journal contains several important articles. The first of these on Dourine, by Captain F. S. W. Baldrey, of the Civil Veterinary Department, India, gives an excellent account of the conditions met with in a disease, to which so much attention has been given during the last three years. The author states that as the disease is conveyed solely by coitus it should not be a difficult matter to stamp it out, especially in India where all, or practically all, the entire horses are Government property. The editor, Professor J. McFadyean, contributes an interesting article on the Prophylaxis of Glanders and points out that the chief defects in the existing regulations with regard to glanders are (1) that they ignore the great service which mallein should render in diagnosis and (2) that they do not deal in a serious manner with the horses known to have been exposed to infection. Mr. Geoffrey H. Livesey supplies a Contribution to the Study of the Diseases of the Eye in the Dog, drawing special attention to a case of glaucoma. Dr. A. Edington, in an article on Biliary Fever in the Horse in Cape Colony, refers to the fact that as a rule one attack renders an animal insusceptible to further attacks of this disease. Part of Dr. Edward Nichols's paper on Implantation of Tissue and its Relation to Cancer is reprinted from the January number of the *Journal of Medical Research.* Other articles of interest are on Abnormal Genital Organs in the Domesticated Animals, by Professor James F. Craig, another on Some Points to be Considered in Connexion with Rhodesian Red-water, by Mr. Stewart Stockman, a series of clinical articles, and a number of abstracts, the most important of which are an article on the Diagnosis of Mammary Tuberculosis, a second on Immunisation against Tuberculosis by von Behring's Method, and a third on Piroplasma Bigeminum of the Immune Ox, by Dr. A. Theiler. Altogether this is a very interesting number.

Journal of Experimental Medicine. Vol. VI., Nos. 4, 5, and 6. Issued Feb. 4th, 1905. The Macmillan Company, Baltimore, Maryland.—At last we have received the completing numbers (4, 5, and 6) of Vol. VI. of the *Journal of Experimental Medicine.* It appeared as though this excellent journal had disappeared from our midst but we are glad to learn that it will continue to be issued under the auspices of the Rockefeller Institute for Medical Research and under the editorship of Dr. Simon Flexner and Dr. Eugene L. Opie. The papers, as we have come to expect in this journal, are excellent. The first of these, a Contribution to the Physiological Differentiation of Pneumococcus and Streptococcus and to Methods of Staining Capsules, by Dr. Philip Hanson Hiss, jun., is of importance because the author is able to show that the chief differential character usually depended upon for the distinction between pneumococci and streptococci—the capsule—cannot always be depended upon, as well-marked capsules undoubtedly occur in organisms which have been classified as streptococci whilst, as is well known, pneumococci in artificial cultures often lose this character. There

are, however, certain metabolic activities which distinguish these two forms; for these we must refer the reader to the original paper. Dr. H. T. Marshall, Fellow of the Rockefeller Institute, contributes an account of some work done under Professor Ehrlich, "Studies in Hæmolysis with Special Reference to the Properties of the Blood and Body Fluids of Human Beings." One of the important points brought out is that the complement differs in amount in various specimens of human blood and that it is available for a variety of normal and specific amboceptors. A number of other observations almost equally interesting are here recorded. Dr. H. S. Steensland contributes a paper on Epithelioma Adamantinum; Dr. Martha Wollstein writes on the Bacteriology of Broncho-and Lobular Pneumonia in Infancy; Dr. Walter Ralph Steiner, M.A., on a case of Dermatomyositis, with Report of a Case which presented a Rare Muscle Anomaly but once described in Man (in this case the author found a degeneration commencing at the centre of the fibre and gradually passing to the periphery); and Dr. W. Ophüls describes Further Observations on a Pathogenic Mould formerly described as a Protozoon (Coccidioides Immitis, Coccidioides Pyogenes), a fungus of which up to the present only some six cases have been related. Dr. Martin H. Fischer contributes a paper on the Toxic Effects of Formaldehyde and Formalin, especially as to the action of this drug on the lungs, the stomach, the peritoneal cavity, the eye, the muscles, the liver, the kidneys, and other organs. The author points out that formalin is, directly or indirectly, chemiotactic for leucocytes. Dr. Norman MacLeod Harris describes a new bacillus, "bacillus mortiferus," which is pathogenic for man and animals. The high character of the work contained in this number makes us welcome the fact that we have had to do with a case of suspended animation merely and not with one of dissolution as far as this excellent journal is concerned.

Veterinary Journal.—The April number of this journal contains an original article by Mr. T. B. Goodall, F.R.C.V.S., F.L.S., on Blood-sucking Flies as Inoculating Agents and Disease Disseminators. Mr. Goodall is recognised as an authority, and his descriptions and sketches though short are interesting and give a very good idea of the part played by these small organisms in the dissemination of disease. Then follow several clinical articles, translations, and short extracts. The most important of these are abstracts from a report on Fowl Cholera issued by the Californian College of Agriculture and of papers on Internal Massage in the Horse in the Treatment of Tympanitis, on Dental Caries in the Horse, on Poisoning in the Pig from the Débris of Silk-worm Cultivation. Notes on Spavin, and the Abuse of Artificial Selection, the latter of which deals with points some of which are of great interest to readers, reviews, and correspondence, complete this number.

Journal of Pathology and Bacteriology. Vol. X., No. 3, April, 1905. London and Edinburgh: Young J. Pentland.—The April number of this journal is a very interesting one. Dr. V. E. Henderson of Toronto contributes an excellent paper on Joint Affections in Tabes Dorsalis, the result of work carried out in Professor Chiari's laboratory in the University of Prague. Dr. Henderson, after giving a *résumé* of recorded cases, presents a new series examined by himself and after describing the anatomical changes found comes to the conclusion that the most important pathological anatomical change is the degenerative lesion in the sensory nerves and paths and that the changes in the joints are the results of trauma, using the term to include not only injuries to the joints from external causes but also those resulting from undue strains and wrenches; further that this is largely owing to the prevailing analgesia, though this may be aided by vaso-motor or reflex trophic changes, which, again, may in turn be influenced by the prevailing sensory lesions. Dr. Henderson contributes a very large number of references and illustrates his paper with a number of reproductions of capital photographs. Another interesting paper is one by Miss C. B. Sheldon Amos on the Effect of Ligature of One Ureter. This work, which has been carried on in the Porte Vieux Laboratory, Alexandria, is of excellent quality and has considerable bearing on the question of secretion by the kidney, especially in its relation to toxic conditions. A paper entitled "An Unusual Duodenal Hernia," by Dr. Albert J. Chalmers, registrar to the Ceylon Medical College, is interesting as an account of a hernia into the recessus inter-mesocolicus transversus which took place, probably, some years before the death of the patient. There are two excellent papers on the blood in disease—one on the Blood Changes in Plague, by Captain Leonard Rogers, I.M.S.; and the other on the Leucocytosis of Typhus Fever, by Dr. Andrew Love, senior resident assistant physician to the Belvidere Fever Hospital, Glasgow. Both these papers indicate what a prominent part the examination of the blood has come to play in the study of disease. A very interesting and useful feature of this as of the last number is that a card catalogue index is supplied not only of the current number but of Vols. III.–VI. Cross references are given in this so that if the references are cut out, pasted on cards, and arranged in alphabetical order under "authors" and "subjects" any paper can be found within a couple of minutes; subjects can be grouped and dates readily obtained. The principle adopted is similar to that in use for the indexing of the Proceedings of the Royal Society of London and cannot but prove of very great value to those who wish to refer to papers that have appeared in this journal.

Journal of the Scottish Meteorological Society. London and Edinburgh: William Blackwood and Sons. 1905. Pp. 187. Price 12*s.* 6*d.*—In the current issue of this annual volume the first of the original articles is a paper on the Treatment of Climatological Observations which was read at a meeting of the Scottish Meteorological Society on Dec. 6th, 1904, by Mr. W. N. Shaw, secretary of the Meteorological Council. Mr. Shaw's object is to obtain a combination of the daily weather reports with the more elaborate observations recorded at the climatological stations and to classify climatological data according to a limited number of types to be agreed on. The directors of the Ben Nevis Observatories publish an account of their endeavours to obtain sufficient financial support for carrying on these observatories. The observatory on the summit of the mountain at an elevation of 4400 feet was opened in 1883 and it unfortunately had to be closed (together with the one on the low ground) at the beginning of October, 1904. The bulk of the volume is occupied by tables of systematic meteorological observations made at about 60 stations in Scotland for the years 1902 and 1903.

Birmingham Medical Review.—The March number of this review contains some very interesting articles. Mr. H. Gilbert Barling treats of renal mobility and unhesitatingly advises operation in severe cases which present troublesome symptoms. Mr. J. W. Taylor urges the value of colpotomy in cases of puerperal fever of medium severity with thrombosis of the pelvic veins. The vaginal roof is opened up on the side chiefly affected and search is made for small abscesses or pockets of pus in the uterine wall and in the broad ligament. The Richard-Middlemore Post-graduate Lecture by Mr. D. C. Lloyd Owen contains a very useful account of recent advances in ophthalmic treatment.

Dublin Journal of Medical Science (April).—Dr. Walter G. Smith gives an interesting account of the relations of the chemical elements and of recent speculations as to the nature of the ether. Dr. R. J. Kinkead discusses puerperal convulsions and lays stress upon the personal factor at work in individual cases in addition to the toxins present. Dr.

A. J. Smith narrates his experience of Bossi's dilator and decides that it is a valuable instrument in suitable cases but that it is dangerous when the cervix is long and not "taken up," especially in case of placenta prævia.

West London Medical Journal.—To the April number of this periodical Mr. J. D. Malcolm contributes a useful paper on Extra-uterine Fœtation. Dr. Alexander Morison discourses of boldness in the treatment of some phases of pneumonia, advocating recourse to blood-letting when there are signs of engorgement of the right side of the heart. Other suggestions contained in the paper relate to the use of an icebag applied to the head and to the employment of turpentine in case of profuse bronchial secretion. Mr. Cecil H. Leaf considers that the four antecedent events most constantly present in cases of cancer of the breast are errors of lactation, a family history of consumption, injury, and worry and anxiety.

Reports and Analytical Records
FROM
THE LANCET LABORATORY.

(1) "WELLCOME" BRAND CHLOROFORM; AND (2) BOROFAX.
(MESSRS. BURROUGHS, WELLCOME, & Co., SNOW HILL BUILDINGS, LONDON, E.C.)

(1) THE fact that chloroform used for anæsthetic purposes has been found to contain a definite though quite small amount of ethyl chloride was referred to in an annotation in THE LANCET of March 4th, 1905, p. 589, and apparently the presence of this volatile substance has a marked beneficial influence on the action of chloroform. It is stated by some authorities that chloroform quite free from ethyl chloride tends to produce cough and holding of the breath, and that this is not the case when the anæsthetic contains a trace of ethyl chloride. The "Wellcome" brand chloroform is prepared on the lines indicated and consists of perfectly pure chloroform containing a small but definite amount of ethyl chloride. (2) Borofax is described as an emollient possessing antiseptic and sedative properties. It is contained in collapsible tubes and consists of a cream-coloured ointment having a low melting-point. It is very agreeably scented and has a pleasant action upon the skin. The oily vehicle does not get rancid and, according to our experiments, is not saponified by aqueous caustic soda solution. It contains a mild and efficient antiseptic which renders it useful as an application for chaps, burns, scalds, and abrasions. In particular it is soothing to the skin which has been exposed to the sun or wind.

VINOLIA WHITE COAL TAR SOAP.
(VINOLIA CO., LIMITED, MALDEN-CRESCENT, LONDON, N.W.)

The presence of phenol compounds in this soap was confirmed by chemical tests. The soap showed a slightly alkaline reaction with phenolphthalein owing probably to the alkaline compound of coal tar acid which has been used. The soap basis is of excellent quality and quite free from crude compounds. The soap is an advance on many coal tar soaps in which crude and often inert oils are employed.

INFANTS' FOOD.
(T. FLETCHER AND SON, 98 AND 99, GREAT HAMPTON-STREET, BIRMINGHAM.)

According to our analysis and examination this is a carbohydrate food modified by a special method of preparation. The analysis was as follows: carbohydrate, 75·21 per cent.; proteid, 11·02 per cent.; fat, 2·60 per cent.; sugar, 0·57 per cent.; mineral matter, 2·40 per cent.; and moisture, 8·20 per cent. The microscope showed unaltered starch cells. The food is very finely ground. The food used alone would not be suitable for infant use but employed as a supplement—that is, by its addition to good cow's milk—a very satisfactory food is obtained for those cases in which cow's milk alone proves indigestible. Presumably, this advantage is due to the mechanical action of the food on the curd. The directions given in regard to the preparation of this food are satisfactory.

CHINOSOL COMPRESSED TABLETS.
(THE CHINOSOL HYGIENIC COMPANY, 16, ROOD-LANE, LONDON, E.C.)

Chinosol, as is well known, has undoubted advantages as an antiseptic, deodorant, and disinfectant. It is non-corrosive, is relatively non-poisonous, and is readily soluble in water. In the form of tablets, each containing five grammes of the pure powder, chinosol is very convenient for use. In a comparatively small compass six tubes of 20 tablets provide an efficient antiseptic armamentarium. Antiseptic solutions of definite strengths for all purposes may thus be quickly prepared.

DIASTASE SETTERIE.
(THE BRITISH PHARMACAL CO., 12 AND 15, FURNIVAL-STREET, LONDON, E.C.)

According to our experiments this is a very active preparation of diastase, the amylolytic enzyme of malt. In its action upon carbohydrates it has the advantage of producing a partly digested mass which is free from acidity or objectionable flavour. We found that quite a minute quantity of the diastase rapidly liquefied a relatively large quantity of starch paste. The preparation is therefore well adapted for the predigestion of carbohydrate foods, while it may be used also for modifying cow's milk for the preparation of infants' food, since diastase appears to prevent the clotting of casein, at all events, in large curds.

VICHY WATER AND OTHER MINERAL WATERS.
(RETAILERS AERATED WATER AND SYPHON SUPPLY CO. ("RAWSCO"), 17 AND 18, LITTLE EDWARD-STREET, ALBANY-STREET, N.W.)

On analysis the Vichy water, which comes from "St. Yorre près Vichy," gave the following results: total mineral salts in solution, 7·46 grammes per litre, consisting chiefly of bicarbonate of soda, 6·93 grammes; and chloride of sodium, 0·53 gramme. On spectroscopic examination of the residue obtained on evaporation distinct evidence of the presence of lithium salts was obtained. The water is pleasantly sparkling but does not contain an excess of gas. It is free from organic impurities. The taste is pleasant and the water gives an agreeable cleansing sensation in the mouth. Vichy is, of course, well known as an excellent example of a natural alkaline water of repute in gastric catarrh, chronic indigestion, and catarrh of the urinary passages. A continued course of the water increases the alkalinity of the blood plasma. We have also examined samples of potash, soda, seltzer, and lithium water made by this firm. The purity of the waters leaves little to be desired and it is stated that they are prepared in silver-lined and electrically driven machines. The seltzer water contained 2·35 grammes of mineral salts and the alkalinity of the potash water was equivalent to 23·60 grains per pint of potassium bicarbonate, of the soda water to 12 grains per pint of sodium bicarbonate, and of the lithium water to eight grains per pint of lithium carbonate.

TOFFEE.
(JOHN MACKINTOSH, LIMITED, KINGSTON CONFECTIONERY WORKS, HALIFAX.)

After all, toffee, when made with honest materials, is one of the most wholesome of sweetmeats. It contains, of course, practically no proteid but a large proportion of carbohydrate in the shape of sugar and some fat in the shape of butter. We have examined specimens of "old-fashioned treacle toffee" and "cream toffee" respectively and we find that they are both of excellent quality and flavour and are evidently prepared from carefully chosen

materials. The cream toffee yielded on analysis 2·39 per cent. of fat which proved to be butter fat. We could find no impurities or any evidence of metallic contamination.

CHELTENHAM NATURAL APERIENT WATER.

(THE CORPORATION OF CHELTENHAM, CHELTENHAM.)

Cheltenham possesses quite a number of interesting mineral springs which deserve greater attention at the hands of the medical profession than has hitherto been bestowed upon them. From the point of view of their chemical composition, at any rate, these waters should possess a therapeutic value not inferior to many continental waters of the same class. We have received a specimen of mineral water which is concentrated from the magnesic sulphated spring water obtained from the wells either in Pittville or Montpellier Gardens. The analysis shows that the water is rich in the purgative salts, magnesium and sodium sulphate. There are, besides small quantities of sodium chloride, bromide and iodide and traces of lithium chloride. The concentrated water, according to our analysis, has the following approximate composition: magnesium sulphate, 21·62; sodium sulphate, 14·10; sodium chloride, 9·06; and calcium sulphate, 1·08. These results are expressed in grammes per litre so that the total mineral salts amount to 45·86 grammes per litre. The water is indicated for use as an habitual laxative in chronic constipation or in portal congestion. It would be interesting to determine whether the mineral waters of Cheltenham show any radio-active property.

GOLD REEF CLOTTED CREAM.

(MESSRS. STONE AND SON, MONUMENT-BUILDINGS, LONDON, E.C.)

This is excellent cream sterilised and preserved in hermetically sealed tins. Our analysis gave the following results: fat, 31·35 per cent.; curd, 5·70 per cent.; mineral matter, 0·37 per cent.; and water, 62·58 per cent. Both the flavour and the consistence are satisfactory and no preservatives are used.

THREE STAR SWISS DRY MILK.

(THE SWISS DRY MILK CO., GLOCKENTHAL, SWITZERLAND; AND MESSRS. NETTLETON AND MORRIS, 17, HARP-LANE, LONDON, E.C.)

This "dry milk," it is stated, is prepared at Glockenthal in Switzerland, the milk being evaporated by the Just-Hatmaker process. It consists of a light dry powder which when dissolved in water gives a fluid having the appearance and the taste of ordinary milk. The flavour is particularly good, in spite of the process of manufacture which so often destroys the peculiar sweet flavour of raw milk. Our analysis of the powder gave the following results: moisture, 2·30 per cent.; mineral matter, 7·30 per cent.; fat, 16·65 per cent.; milk sugar, 45·18 per cent.; and proteid, 28·57 per cent. Except as regards fat, of which there is a decided deficiency, this analysis corresponds with that of cow's milk from which the water has been removed by evaporation. The deficiency in fat should obviously prevent the preparation from being sold as whole milk, as if it were proceedings might be taken under the Sale of Food and Drugs Act.

RUSSIAN LOCAL GOVERNMENT CONTROL OF WORKMEN'S MEDICAL SERVICE.—A special committee sitting on the workmen's problem, presided over by the Minister of Finance, M. Kokovtzoff, proposes that the town and local authorities all over the country should, in place of the employers as is the case now, take over the medical assistance of the workmen, making the workmen contribute a certain premium. As it is they constitute over 80 per cent. of those who use the town hospitals. It is calculated that to cope with the question in St. Petersburg, where there are 160,000 workpeople, the council might get 600,000 roubles per annum to organise a workmen's medical service by making a levy of four roubles per person, part from the factories and part from the workmen themselves.

VISIT OF BRITISH PHYSICIANS AND SURGEONS TO PARIS.

(FROM OUR SPECIAL COMMISSIONERS.)

WEDNESDAY, MAY 10TH.

THE JOURNEY TO PARIS.—THE RECEPTION AT THE SORBONNE.

FROM the moment the British medical visitors set foot on French soil the series of welcomes, of speeches, and of felicitations began. At Calais, after a splendid passage, they were met by members of the reception committee and of the Calais committee of the French Alliance. At the Maritime Station the members of the Calais municipality, the Calais Chamber of Commerce, and the corporation of the Calais medical practitioners were waiting to receive the English visitors. A brief address of welcome was delivered by Professor F. LENNEL and Sir DYCE DUCKWORTH replied, saying:—

Messieurs,—Au moment où nous touchons le sol de votre belle France, je vous prie, au nom de mes confrères, d'agréer l'expression de notre profonde reconnaissance pour cet accueil si gracieux. Ayez l'assurance, messieurs, que nous sommes vivement touchés de vos aimables efforts, et que nous, médecins anglais, désirons de tout notre cœur augmenter, autant qu'il est possible, une entente cordiale qui devrait toujours exister entre nos deux pays.

These words were greeted with enthusiasm and then a splendid bouquet of choice flowers was presented to Lady Duckworth. Flowers were also forthcoming for the other ladies present and these were ornamented with the combined French and British colours. At Boulogne, where a large number of British medical men disembarked, a similar welcome was awaiting them.

On arriving at Paris the Calais train drew up at a special platform, No. 2, where the departures generally take place. Here Dr. Lucas-Championnière, vice-president of the organising and reception committee, Dr. Triboulet, the secretary, accompanied by Dr. Lombard, Dr. Marcel Briaud, Dr. Pierre Marie, Dr. Jarvis, Dr. Choppin, Dr. Chauffard, Dr. Debout-d'Estrées, Dr. Maegnat, Dr. Teissier, and many others, were waiting for their British colleagues. M. Sartiaux and M. Griolet, chief engineers of the French Northern Railway Company, Captain Churchward of the Chatham and South-Eastern Railway Company, and Dr. Perrier of the Railway Medical Service, together with M. Martin, the principal station-master of the line, were there also. The Northern Railway Company of France was not only thus represented by its leading officials but a waiting room had been set aside and elegantly decorated with velvet hangings and a brave display of French and English flags. On reaching this room Dr. LUCAS-CHAMPIONNIÈRE spoke a few words of welcome both in English and in French. Sir DYCE DUCKWORTH replied in French, expressing the joy felt on reaching *la Ville Lumière* and again insisting on the desire of the British medical profession to promote the *entente cordiale* between the two countries. The travellers were then conducted by members of the committee to carriages that had been retained for them and conveyed to the Grand Hotel, the Hotel du Palais d'Orsay, and other hotels. A similar welcome awaited those who came by the later Boulogne train.

In the evening between 9 and 10 the British visitors arrived at the magnificent new wing of the ancient Sorbonne. Here and by the care of M. Durand, secretary of the Academy, the first floor of the massive buildings giving on to the rue des Écoles was brilliantly illuminated. In the great saloon of the council of the Academy the leading members of the Paris University were waiting for the British medical men. On the landing and lobbies were tables where the visitors could obtain information and inscribe their names for inspecting the hospitals, assisting at operations, clinics, &c. Then a door was left open which led to the loggia of the grand amphitheatre—a model assembly hall. The new portion of the Sorbonne was commenced under the presidency of M. Grévy and completed under M. Carnot in time for the Universal Exhibition of 1889. The hall is one of the most scientifically ventilated buildings in the world. Here the ideal of M. Emile Trélat has been realised, the audience

breathing pure, cold air that has not been warmed or tampered with, while the heat radiates from all the walls, ceilings, and floors. Then the seats are so admirably placed that they all command an equally good view of the platform. Finally, above the platform there is the magnificent fresco painting by Puvis de Chavannes. In other parts paintings give different episodes of the history of the University of Paris.

At about ten o'clock, most of the guests having arrived, seats were placed in a half circle in the great saloon and a request for silence was made. M. LIARD, Rector or President of the council of the University of Paris, was the first to speak. He said that he was pleased that to aid their endeavours to welcome their British visitors the May sun had at last made its appearance, adding its smiles to the salutations of the University of Paris. On the morrow of the day when Edward the Pacificator had given yet another pledge of friendship between England and France he was sure that these aspirations for peace would be echoed by the University of Paris. Indeed, far away in the dim past, even in the twelfth century, the University of Paris had been the means of bringing English and French together. In those days the students used to call themselves a nation. Thus there were at the University of Paris the nation of Picardy, the nation of Normandy, and the nation of England. In connexion with this last-named nation there still remained, and close by, the Rue des Anglais. The poor lodgings of this old and poor street, compared with the comfortable quarters of the Oxford and Cambridge students of to day, would show what progress had been accomplished. But the ancient and rough accommodation was the forerunner of the university facilities now enjoyed. Each "nation" had its fête day at the University of Paris, that of the English being the day of the English king St. Edmund, which was loyally kept in both Church and tavern. On several occasions members of the "English nation" became rectors of the University of Paris, so that the British visitors had to-day come back to the cradle of their learning. After some more historical allusions M. LIARD described the wonderful scene enacted in the adjoining great amphitheatre some 15 years ago. All civilised nations had sent representatives to render homage to Pasteur on the occasion of his seventieth birthday. England had sent another man who, like Pasteur, belonged to all humanity. This was Lister. Here the British man of science described what he owed to the French man of science and then these two men to whom humanity owed an eternal debt of gratitude fell in each other's arms. A thrill vibrated through the vast audience, cheers and tears mingled as Pasteur and Lister embraced. These two men, so great in the services they had rendered, typified science striving to relieve suffering humanity. Then was cemented an *entente cordiale* that might become imperishable. It existed far above the plane where untutored elements might work mischief. The love of science, the love of preventing pain, was a force that flourished over and above the rivalries of parties and politics. It was not sealed with the fragile wax of chancelleries, but it grew out of a true sentiment and would be strengthened by such meetings as that which now honoured the University of Paris.

M. LYON-CAEN, general secretary of the society of "The Friends of the University," rose to apologise for the absence of M. Casimir-Perier who was too ill to attend.

Then Dr. BOUCHARD, President of the French organising committee, welcomed the visitors. He was especially pleased to meet them within the walls of the university, where from the very first learning found a haven from the surrounding savagery. The old, old buildings had been renovated by modern art and science but the university remained true to its glorious traditions. In the name of the wives of the French medical men he extended a special welcome to the ladies who had come from England and graced the Sorbonne by their presence.

This being the last of the speeches on the French side the band of the Fortieth Infantry, which was in the next room, played the "Marseillaise" and the audience rose and applauded in honour of the French National Anthem.

Sir WILLIAM BROADBENT replied in French on behalf of the British visitors. He remarked that this visit had become a matter of greater importance than was at first anticipated. They had been received, not only by professional colleagues, but by municipalities, by the institute which placed Chantilly at their disposal; indeed, by the whole intellectual aristocracy of France. In such circumstances it was permissible to consider their visit in conjunction with two other visits that had done so much to draw the nations together. He alluded to the visit of King Edward the Peacemaker to Paris and that of M. Loubet to London. Then by the side of this great example there were the reciprocal visits of the pacific workers of both countries. The *entente cordiale* had existed a long time. It could be established from a distance but how much better it was to draw close to each other, to know each other personally, and that was precisely what he and his colleagues desired in welcoming the members of the French medical faculty to London and to-day in visiting them in Paris. This friendship must be maintained and strengthened and if the United States of America could be induced to fall in also then the peace of the world would be assured. The magnificent reception now granted would never be forgotten. He regretted the absence of M. Casimir-Perier who was greatly respected in England. (While Sir William Broadbent was thus endeavouring, and with much success, to return thanks the electric light failed and the audience was plunged into profound darkness. Nevertheless, the speaker continued and the audience kept their seats. In a little while candelabra were brought in but they only gave a dull light and it must be confessed that the whisperings as to the possibility of getting a light prevented the hearing of the latter part of Sir William Broadbent's speech.)

Professor CLIFFORD ALLBUTT, who also spoke in French, followed on behalf of the Universities of England and especially of Cambridge. He described his medical education in Paris and his indebtedness to Trousseau and other great French teachers. He made historical allusions, going back to the Alexandrian school and the classics of Greece. He spoke of the work of Charcot and Pasteur in the evolution of modern medicine and also contrived to allude to Victor Hugo's dream of a United States of Europe. He thought that the French and the British nations were made to work together. Their flags had the three same colours, symbolical of liberty, equality, and fraternity; there was only a diversity in form. Let the two nations draw together. Henry IV. had said that Paris was worth a mass; was not London worth even a rough Channel crossing? The seeds of a new era had been sown and only required water and sunshine to grow; London would provide the rain and they asked Paris for the sunshine.

Dr. GEORGE OGILVIE, speaking in French, replied on behalf of the Scotch Universities, reminding the audience that there was a Collége des Écossais as well as a Rue d'Écosse in Paris and that there had always been the most intimate relations between the Scotch and the French for centuries.

At the conclusion of this speech the band played "God Save the King," which was likewise listened to standing and received with cheers.

The visitors then strolled about the magnificent edifice, contemplated the pictures (for now the electric light had been restored), and refreshed themselves at the buffet. It was a brilliant and most enjoyable evening in spite of the little accident to the supply of electricity.

THURSDAY, MAY 11TH.

RECEPTION AT THE FACULTY OF MEDICINE.

The first function on Thursday was a solemn reception at the Faculty of Medicine. This venerable institution was definitely constituted in the middle of the thirteenth century. At that time the University of Paris became a State supported school. It was legally established and divided into four faculties—the faculty of the arts (literature and science), the faculty of theology, the faculty of civil and canon law, and the faculty of medicine. At the head of each faculty there is a dean or *doyen* who is elected for two years by the professors. The members of the French reception committee have been wearing throughout, suspended by two ribbons (one the French and the other the English colours), a reproduction of the great silver seal first used in the thirteenth century by the Paris Faculty of Medicine. It still bears the inscription, which time and rough usage have only partially effaced, "*Sigillum magistrorum Facultatis Medicinæ Parisiensis.*" The members of the faculty have not only preserved their antique seal but they still wear the ancient robes and cap. These they donned in honour of their British visitors and standing in rows under the classic porticoes of the well-known building in the Rue de l'École de Médecine the members of the faculty contributed to the picturesque effect of the scene. Indeed,

but for them and the brilliant toilettes of the numerous ladies present the gathering, however pleasant in itself, would have seemed gloomy in its outward appearance. The everyday modern male attire does not help to make a picture and tends not to enhance but rather to mar the effect of monumental buildings selected for solemn receptions. But on this occasion appearances were saved by the gallant display of gold braid and crimson silk which adorned the members of the Paris Faculty of Medicine, and also by the complimentary and in many instances the successful manner in which the English ladies strove to imitate the elegance in dress of their Parisian sisters.

After a while the crowd moved to the great amphitheatre and there the new Dean of the Faculty, Professor Debove, with Sir William Broadbent by his side, occupied the central position of the hemisphere. After the half circle of seats that rise up nearly to the ceiling had been occupied, Professor DEBOVE made a short speech. He was much applauded when he said: It is stated that science has no country but that men of science have a country. Nothing can be more exact. Our common country is a nation where people are not persecuted for their political or religious theories. There that disgrace to civilisation, war, is unknown. The citizens of that country labour, so that by the accumulation of knowledge they may force back and farther away the surrounding shades and darkness which still envelop us with poverty and misery, and cause diseases that are preventable and illness which we strive to cure. Being citizens of the same country we were not surprised by the hearty welcome that you gave us last year in London and to-day we are happy and proud to receive you in our ancient faculty. You are here in a building which belongs to us all and its very walls welcome you as friends whose visit was impatiently anticipated.

The Dean's remarks were so well appreciated by those who understood that he was prevailed upon to repeat them, or a portion of them, in English for the benefit of those who did not know French. Then Sir WILLIAM BROADBENT replied with a few words of thanks, after which guests and visitors proceeded to visit some parts of the building. They wound their way through the long room that constitutes the recently enlarged library, where in the course of a day there are sometimes as many as 500 students who come to consult the precious collection of books. The Orfila Museum, with its many anatomical specimens, was likewise visited. The council chamber of the professors of the faculty was selected as the place for leave taking, for the visit had to be brief, there being two other functions the same afternoon. This room is fitted with chairs such as might be seen in a small parliament or municipal council. The walls are entirely concealed by sumptuous Gobelin tapestries of the seventeenth century. The colours are sombre and convey a sense of seriousness and dignity, but there was not much time to examine and to admire as it was necessary to proceed to the Hôtel de Ville.

RECEPTION AT THE HÔTEL DE VILLE.

Everyone acquainted with Paris life and French politics knows the importance of a reception by the great governing body of the capital. In vain the Central Government rank the President of the Paris Municipal Council with the Prefect of the Seine and the Prefect of Police; it is the voice of the elected representative of the people, and not the functionaries of the Government, which carries the greatest weight in all that appertains to the spirit and the aspirations of the Parisian population. In the present instance the Presidency of the Municipal Council is occupied, most appropriately, by a doctor of medicine who has actively contributed to bring about many sanitary improvements. Dr. Paul Brousse is well known to sanitary reformers. He is also well known politically as having always, and even when the idea was far from popular, striven to bring about the nearest possible approach to an alliance between England and France. In these circumstances he lent himself with more than usual energy to the task of emphasising the significance of the visit paid by the British medical men. For such purposes the people of Paris have known how to build for themselves a palace that would do honour to any court in Europe. Those who had never visited "the town's mansion or hotel" (Hôtel de Ville) were lost in wonder and admiration. More than one of the London visitors was heard to murmur that the London county councillors must see the Hôtel de Ville. This admiration continued and was emphasised as after the ceremony of reception the guests wandered through all the ballrooms and other apartments. This was the more interesting as a plan was provided with a list of the pictures and the works of art.

At first the guests gathered in the saloon dedicated to literature, but soon the ladies were directed to the central saloon which occupies the middle place in the three rooms devoted to literature, art, and science. Under Bonnat's magnificent ceiling, representing the Triumph of Art, the ladies were invited to sit in a half circle. Facing them, and forming another half circle, was the Paris municipal council. The gentlemen stood on both sides and the finest military band of France, that of the Republican Guards, was in the third room. In this manner any unsightly crowding together was prevented and the eye could travel from group to group, each having its significance and interest. The opening between the rooms is so wide that it was easy to see from one to the other.

Dr. PAUL BROUSSE, as President of the Municipal Council, was the first to speak. After thanking the French organising committee for bringing their English visitors to the Hôtel de Ville, he alluded to Sir William Broadbent's remark that the scientific *entente* had very effectively preceded the political *entente*. Dr. Brousse urged that medical men were well suited to be the "diplomates of peace." On the battlefield and in the consulting room the medical man only saw friends whom suffering had raised to the dignity of patients and victims. He continued: "Each man of science, without doubt, has a country of his own. But when animated by his love of scientific research he soon rises to such heights that under him the most natural of frontiers are effaced, the mountains are flattened down, and the widest channel seems but as a silver thread. On the high summits of learning if, according to Victor Hugo who was our poet and your guest, names such as those of Darwin, Lamorck, Jenner, Pasteur, Lister are mentioned, no one, whether pupil or master, thinks of the diversity of the countries whence they came. These benefactors of humanity, among whom you have already taken your place, gentlemen, appear as if they were compatriots, as if they were the sons of a new city, an ideal city, possessed of some truly superior essence. Nothing could be more natural than that *l'entente* should number you among its precursors. You would not forgive me, gentlemen, if when dealing with this matter I did not render homage to your sovereign, King Edward VII., whose very politic intervention at so perilous a moment assured us that supreme blessing, peace. Nevertheless, as in regard to all great historical events, this friendship was not the fortuitous product of one mind or will. We had to reckon with the time necessary for all natural evolutions and it is precisely this laborious genesis which proves its necessity and offers the best guarantee for its solidity and durability. In this respect allow me to communicate a souvenir where my personal vanity may find expression. If I have to-day the great honour of saluting in these saloons the illustrious representatives of British science, I had also the joy 23 years ago of welcoming to Paris in the name of the workers of France the delegates of your trade unions, some of whom were Members of your House of Commons and who came over here to conspire with us in favour of the Channel Tunnel. We worked together with admirable ardour to bring our two peoples nearer to one another. We wanted to facilitate the exchange of ideas and of products. Our solicitude even took into consideration the delicate constitution of certain stomachs. We were not successful; we did not by piercing the tunnel prevent sea-sickness; so we must look to you, gentlemen, for a more effective treatment of this malady. But we were none the less the workers and precursors of *l'entente cordiale*. I should commit an impertinence, gentlemen, if as a modest medical practitioner I attempted to address to each of you the homage you deserve. This duty befits better my masters in the profession and, with greater authority than I possess, they will know how to accomplish this pleasant task. I remain in my place in thanking you for your visit in the name of the Municipal Council of Paris, in the name of the population of Paris who elected my colleagues and myself. I entertain the hope that our welcome will appear to you worthy of the occasion, particularly if you will be so good as to judge us by the loyalty and sincerity of our sentiments. Ladies, we are most grateful to you for your gracious presence, for the delicate charm it brings to this reception, rendering its souvenir ineffaceable. Once more, ladies and gentlemen, we thank you for your cordial visit."

The Prefect of the Seine, M. DE SELVES, was the next to speak, and he alluded to the reception of the French medical men in London, to their admiration of the English hospitals. They had noted how much was due in England to individual initiative and how efforts were made to convert hospital wards into homes for the patients, where the charm of flowers and of pictures abounded. Perhaps France suffered from excessive centralisation and uniformity. He felt certain that both nations had much to learn from each other. The French, he added, would never forget that in 1874, "when our immortal Pasteur was isolated and medical circles did not seem inclined to recognise him it was among you and in the person of Sir Joseph Lister that he found his first ally. How great, also, is our joy when we recall the emotion felt at the memorable meeting held at the Sorbonne on Dec. 27th, 1892, when Lister, after having retraced the struggles of the past, approached Pasteur, and these two learned men embraced fraternally, thus, as it were, sealing in advance by the kiss of science the friendship of our two countries." The people of Paris were never indifferent to that which bore a high moral meaning. After some graceful allusions to the works on diseases of the nerves by the President of the British visitors, Sir William Broadbent, M. de Selves recalled that in 1904 at the London banquet a telegram was received from His Majesty Edward VII. which expressed the hope that the visit of the French medical men would be of benefit to both countries. The speaker concluded by inviting all present to join him in expressing with respectful diffidence their gratitude to His Majesty the King of England for having come to Paris, for having so powerfully helped to bring the two nations together, and their best wishes for the noble nation which the guests present to-day helped by their work to render great and honoured.

It was now the turn of the Prefect of Police, M. LEPINE, to speak. He dwelt on the fact that diplomatists might prepare and even sign alliances, but such agreements were only successful when supported by the popular sentiment and sanctioned by the intellectual *élite* of the countries concerned. He thought that this, the truest form of alliance, was being brought about by a solemn gathering together under the protecting wing of science. He alluded also to the fact that medical men were not merely learned but essentially practical; indeed, they were practitioners. The olive branch carried in their hand would therefore be an effective remedy against war.

The French speeches in honour of the British guests being now terminated the band played "God save the King" with great power, introducing new harmonies that were most effective. It was then the turn of the British to reply. It would seem, however, as if they had not been aware of the importance of the occasion. Many individual French medical men have made most generous and lavish efforts to entertain their British visitors. But, and apart from private initiative, the principal host is the Paris taxpayer; to him all the hospitals belong and all the public institutions where the British delegates have been so well received, and his representative is the Paris Municipal Council. In such circumstances some effort might have been made to prepare a suitable reply to the three important and eloquent addresses which were delivered at the Hôtel de Ville. Sir WILLIAM BROADBENT and Sir DYCE DUCKWORTH did certainly plunge into the breach and attempted to make up for the deficiency. But Sir WILLIAM BROADBENT himself said that it was impossible to reply worthily. He declared that he could not find words to say all that he would like to say and all that ought to be said. In London they had done their best but they had now been beaten. The French spoke gratefully and gracefully of their visit to London but this was eclipsed now. All that he could do was to thank them. The British would never forget the reception that they had enjoyed and the warm welcome that they had received from the town of Paris and from the French medical profession.

The band followed up the speeches of the British visitors with the "Marseillaise," then refreshments were handed round, a choir sang some old French popular songs, and the military band played various selections. The concert terminated by the Coronation March of H.M. Edward VII. by Saint-Saëns. This delicate compliment, admirably rendered by the band of the Republican Guard, concluded this most brilliant reception.

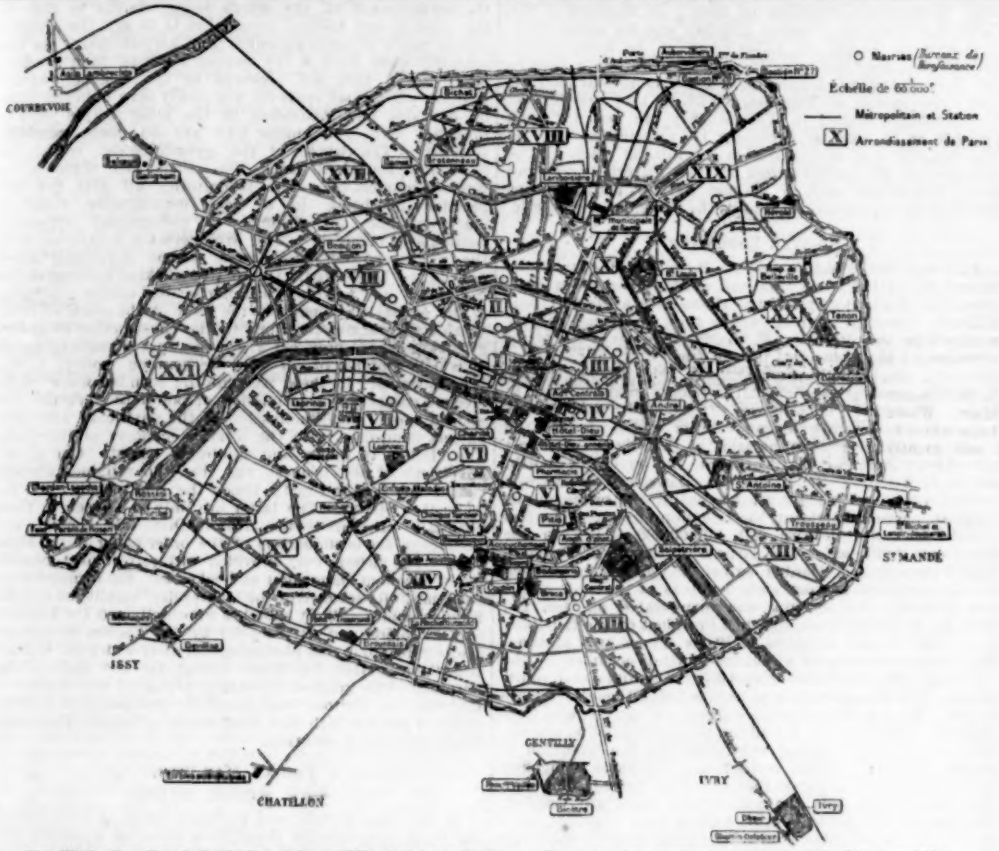
VISIT TO L'ASSISTANCE PUBLIQUE.

On Thursday afternoon, after the magnificent reception at the Hôtel de Ville, a considerable number of the visitors adjourned to the adjacent head offices of the Assistance Publique, in the Avenue Victoria, to be present at the somewhat formal reception, presided over by M. Mesureur, director of this important administration. The change from the luxurious surroundings of the Hôtel de Ville was very marked; no more marble staircases, no imposing statuary, no wealth of Gobelin tapestries and pictures; simplicity bordering on penury prevailed. We may remind our readers that the Assistance Publique of Paris emulates the functions of the Poor-law guardians, the Metropolitan Asylums Board, and the hospital administrations of London all rolled into one. It is subdivided into departments to deal with the multifarious branches of public assistance and is controlled by a director, nominated by the Prefact of the Seine and appointed by the Minister of the Interior. This official supervises the working of the huge "machine," but when any change is suggested which necessitates the expenditure of money not already provided for he has to consult the Conseil de Serveillance, a composite body made up of highly placed municipal and State officials, with whose approval only can such schemes be carried into effect.

The hospitals in Paris are municipal institutions to which all citizens have a *right* of admission in the event of their requiring medical or surgical assistance, differing in this respect from the London hospitals, where sundry restrictions are imposed and more or less enforced on candidates for admission. At the same time patients who are able to pay for their maintenance are invited to do so. From this point of view the Paris hospitals are administratively more akin to our Poor-law infirmaries, except that admission entails no social disqualification. The members of the senior medical staff are selected by competitive examination and are paid salaries amounting in the case of full physicians and surgeons to about £60 a year, the resident (junior) staff (*internes*) being allowed a small salary, about sufficient to cover their contribution to the hospital "mess." The latter hold office for four years, one year in each department of practice. They are drawn from senior students who have passed all their examinations for the doctorate but, not having presented their theses, are technically unqualified. Another important department is that which provides for the maintenance of abandoned children, of whom some 55,000 are brought up by the Assistance Publique. These children are all boarded out in the country, far from Paris, the more promising ones receiving in due course technical instruction in gardening, printing, housekeeping, and cabinet work.

The clerical staff numbers 900, while the hospitals and asylums give employment to 6000 attendants and 1500 workmen. The principle of extreme centralisation, as applied in the Assistance Publique, is claimed to result in great economy of administration and although the system presents some serious drawbacks there can be no doubt that the Administration is enabled to purchase supplies on vastly better conditions than would otherwise be the case. The expulsion of the Sisters of Mercy who had previously discharged the duties of hospital nurses threw a very heavy responsibility on the Administration and it is only during the last 10 or 15 years that the nursing staff has been placed on an approximately satisfactory footing. The nurses are trained at the Écoles Municipales. They are drawn from the working classes and it is claimed that the fact of their belonging to the same social class as the majority of the patients enables them to sympathise more fully with the latter than the "lady-like" English nurse. It is, however, realised that the English system has advantages of its own which it is hoped to obtain by the institution of an Ecole d'Infirmières at the Salpêtrière Hospital. The new nurses take the place of the men (*infirmiers*) who formerly did much of the ward work, to the unquestionable benefit of the patients for the now abolished *infirmier* was usually a man of rough exterior and coarse manners, ill-suited to have charge of the suffering poor.

The resources of the Assistance Publique, in addition to endowments, comprise a subsidy of 28,000,000 francs (£1,120,000) paid by the municipality, plus about £140,000 derived from a heavy tax on the gross receipts of places of amusement, fees paid by patients and gifts, making a gross aggregate of 47,400,000 francs (£1,896,000) per annum—by no means a large sum when one bears in mind the wide scope of the board's sphere of action. The expenses are given at 57,000,000 francs but we



Map illustrating the administrative stations of the Assistance Publique. (Reproduced by the kind permission of the Director of the Assistance Publique, M. G. Mesureur.)

are not told whence the balance of expenditure over income is derived. Returning to the reception, which only lasted about half an hour, the Director, M. MESUREUR, welcomed the visitors and invited them to take cognisance of the details of the administration, the history whereof he briefly sketched. He was followed by M. FELIX VOISIN, Vice-President of the consultative committee, who explained the position of his committee with regard to administration and the mode of recruitment.

Short speeches in French were made by Sir JOHN W. MOORE of Dublin and by Sir WILLIAM BROADBENT acknowledging the very great courtesy and kindness shown to the visitors at the reception.

THE CHILDREN'S HOSPITALS.

Identity of purpose has led to similarity of position in the hospitals for sick children in Paris and in London, for in both cases the hospitals are in widely different parts of the town and in the midst of the poorest populations. The Hospital for Sick Children in the Rue de Sèvres, better known as the Hôpital de l'Enfant Jésus, was erected as an orphanage by the Curé of Saint Sulpice at the cost of Marie Leczinska and the Marquise de Lussan in 1732. The foundation was altered during the Revolution and since 1802 it has been used for the purposes of a modern hospital. The buildings cover a great space and the hospital maintains no less than 632 beds. The wards, as might be expected, are not of up-to-date type and to modern ideas overcrowded. Thanks, however, to the minute care taken by the *personnel* the cases do well and the temperature appeared to be thoroughly satisfactory throughout the wards. Dr. Broca operated on a case of congenital dislocation of the hip, using a modification of the Lorenz method, which his radiographs show to be of a satisfactory character, for several of the cases have been under observation for many months and the head of the femur has remained in its new position. He is careful, he says, only to operate upon one side at a time and he keeps the patients in bed for a much longer time than is the custom in England.

The Hôpital Bretonneau for Children was built in 1901 and is situated at Montmartre, almost as far away as is possible in Paris from the Hôpital des Enfants Malades. It contains 261 beds, to which at times of emergency 134 beds can be added. There is also a large out-patient department. Boys and girls are admitted up to the age of 15 years, but some limit is placed when it is possible to do so upon the number of children under the age of three years who are in the hospital at one time. The hospital is well built and upon the pavilion system and there is a separate pavilion for infectious cases. The wards are up to the highest standard of hospital construction and they are not overcrowded. Dr. Felizet performed an operation for excision of the knee in a case of tuberculous disease by a novel method which appears to give excellent results and he says that he has done more than 300 in the same manner. It consists essentially in the removal of all the epiphyseal tissues except the circumferential cartilage and subsequent disinfection.

In both hospitals it appears that there are many more cases of appendicitis occurring in children than is common in England and it is quite apparent as a result of the observations of the French surgeons that appendicitis is even more erratic in its course in children than in adults. Neither the pulse nor the temperature is a sufficient guide to the condition of a child with an inflamed appendix and all such cases require the most careful and constant supervision to avoid disaster. The Assistance Publique has several convalescent homes for children—namely, at Berck-sur-Mer (Pas-de-Calais), for the treatment of hip disease and

other tuberculous affections of bone; at Hendaye in the Basses-Pyrénées for strumous children and for general convalescence at Forges les Bains; and at La Roche Guyon on the Seine, near Mantes. The French surgeons appear to put their operating theatres to a much more extended use than is the custom in England. With us they are devoted to operations alone; in France they are used for such patients as it may be necessary to anæsthetise and on occasion for the demonstration of clinical cases. The technique of the operation does not vary materially from our own; chloroform with or without oxygen and given by means of an apparatus seems to be the favourite anæsthetic.

HÔPITAL BOUCICAUT.

Attracted by the remark that the Boucicaut Hospital is the newest and at the same time the most up-to-date in Paris several of the visitors presented themselves at its portals at 9.30 on Thursday morning where they were very politely received by the director (M. Longepierre) and the senior members of the staff, Dr. Letulle (medicine), Dr. Chaput (surgery), Dr. Doléris (gynæcology), and others. Where there is so much to describe it is difficult to know where to begin. However, the pleasure of the visit was greatly enhanced by the magnificent weather which enabled the buildings and gardens to be seen at their best. Amongst the visitors were Sir W. Broadbent, Sir Dyce Duckworth, Mr. C. A. Ballance, Dr. Tyson, Dr. Dawson Williams, and several others. A word must be said of the origin of the hospital. Mme. Boucicaut, the late proprietress of the Bon Marché, on her decease left 10,000,000 francs to the Assistance Publique for the purpose of founding a modern hospital to be called after her, two of the wards being reserved for the reception of any sick members of the staff of the Bon Marché. The hospital was inaugurated on Dec. 1st, 1897, by M. Felix Faure, the then President of the Republic. It is built in the outskirts of Paris on an area of about 30,000 square metres, of which one-fourth is occupied by the buildings, the remainder comprising the gardens and courtyards. The official number of beds is 194, although more are in use. All the arrangements suggest the most careful forethought. The hospital is built on the small pavilion system, the surgical wards being subdivided for the reception of septic and aseptic cases respectively, the cases being first investigated in a separate reception room before admission. On the medical side the tuberculous cases are isolated. On arrival the patients are washed and provided with sterilised clothes (blue cloth and canvas shoes); their own clothes are then disinfected and returned to them on their departure. If the diagnosis is clear the patients are then removed to the wards; in doubtful cases they are kept in an observation ward for as long as may be necessary. There are the usual waiting-rooms and surgical, medical, and gynæcological rooms. In the waiting-room there is a striking picture representing the dwelling of a poor family, the father on his death-bed surrounded by his wife and children. The picture is entitled "Death from Alcoholism." In the out-patient department there is a special theatre with adjoining sterilising room for small operations not necessitating admission into the wards. The eye is immediately arrested by the presence of spittoons suspended on the walls at rather frequent intervals. These occur chiefly in the out-patient department, the intention, no doubt, being to lessen risk from the habits of new and ill-disciplined arrivals. The wards are strikingly roomy and airy, dome-shaped and tiled, with rounded corners, so that thorough cleaning may be obtained by means of a hose. Dr. Letulle has a horror of brooms and feather brushes (plumeau) and has devised a cartoon representing a skeleton (the symbol of death) carrying brooms on the shoulder and brushes about the waist, fleeing from a jet of water which has been turned on it by one of the porters. Beneath the drawing is the following inscription: "Mort a balai! Mort au plumeau!! De l'Eau! Encore de l'Eau!! Toujours de l'Eau!!! Jamais trop d'Eau!!!!" Judging by the beautifully clean aspect of the place it is easy to imagine that water for cleansing purposes is not stinted. The beds appear to be rather close together but no doubt the proper amount of fresh air per patient is duly obtained, as the wards are lofty and wide and many windows are provided. A goodly supply of large-sized thermometers is kept in carbolic solution in each ward. The temperature is always taken in the rectum, never in the mouth. There is also an obstetric and gynæcological section under the care of Dr. Doléris, the arrangement of the wards being similar to that of the surgical and medical ones—that is to say, the greatest care is taken to separate septic from aseptic cases. In the obstetric ward were a few women awaiting their confinement, when they are removed to the "labour ward." Another ward is set apart for the newly born children—cots on one side and incubators on the other. This ward is provided with wet nurses who are no doubt carefully selected. The whole of the gynæcological section is rigorously separated from the others and there is no intercommunication. The laboratories all give the impression of being in a very workmanlike state of efficiency, the one devoted to radiography appearing particularly complete. The arrangements connected with the mortuary and post-mortem rooms apparently leave nothing to be desired. One of the striking features of the institution, and to which Dr. Doléris called special attention, is the endeavour to enhance the value of the so-called isolation of the various pavilions by the construction of underground passages provided with a network of rails by means of which supplies of all sorts are sent on trolleys to the various wards. In these passages are seen hot-water pipes, electric cables (for transmission of power to work the lifts and to supply the illumination of the pavilions), and other objects connected with the interior economy of the place. The kitchen is roomy and admirably served. One of the conditions of the bequest was that the religious element should not be abolished; hence the small chapel and the Augustine Sisters. The latter are only to be seen in three hospitals in Paris—viz., Hôtel Dieu, St. Louis, and Boucicaut, the headquarters of the order being at the Hôtel Dieu. The visitors were provided with refreshment, consisting of excellent champagne and cakes, &c., the former having been carefully selected of the "extra dry" quality to suit the English palate. Short speeches were delivered (in English) by Dr. Doléris and (in French) by Sir William Broadbent. The entire group was photographed, after which Sir William Broadbent called for three cheers for the staff of the hospital. The greatest cordiality prevailed and it may be said that the visitors were genuinely gratified at the extraordinary pains which had been taken to render their visit instructive and interesting.

FRIDAY, MAY 12TH.

THE HÔTEL DIEU.

As the most ancient and probably the most important of the Paris hospitals the Hôtel Dieu attracted a considerable number of visitors. The present building, which covers 21,770 square metres, was built, or rather commenced, in 1865, and there are many practitioners of the present generation who can recall the musty, more or less dilapidated hospital which spanned the small arm of the Seine on the opposite side of the square near the Cathedral. The old building dated back to the seventh century and only two portions of it remain. Completed in 1877 the present Hôtel Dieu nominally contains 828 beds, though the number has been added to regardless of space when there is extra pressure on the accommodation. It is an imposing structure, quadrangular in form, and spaces of no less than 11,389 square metres are laid out in courtyards and gardens. The staff includes names—Dieulafoy, Le Dentu, Lucas-Championnière, Champetier de Ribes, and others—that are well known throughout the world.

The visitors were received by the staff and told off into parties according to the departments in which they were most interested. It would be impossible to exaggerate the courtesy and kindness with which they were greeted and their wishes acceded to. The nursing question was naturally one to which special attention was given. The problem that presented itself in the substitution of lay nurses for sisters of mercy, though not yet completely solved, is in a fair way to attain success. The staff spoke very highly of the services rendered by the *infirmières* trained by the Assistance Publique, though admittedly they are drawn from a different social class to that from which English nurses are obtained. The beds, it is true, are closer together than is consistent with English taste but, thanks to the colossal budget at the disposal of the authorities, no expense is spared in keeping this and other Paris hospitals thoroughly abreast of the times. The operating theatres—which somehow always come in for special attention—are palatial and it would be difficult to suggest any direction in which, in the light of our present knowledge, improvement would be possible.

HÔPITAL NECKER.

He who would be well informed in all matters concerning the cardio-vascular system makes a point of spending a portion of his time at the Hôpital Necker. As hospitals go in Paris, it is not a very large one. It has about 500 beds, a proportion of which is set apart for chronics and incurables. It has been called by various names, such as La Charité, Hospice de Saint-Suplice, Hospice du Gros-Caillou, and Hospice de l'Ouest, but it is now known by the name of the lady, the wife of the famous banker whom Louis XVI. called in to arrange the national finances, who was mainly instrumental in founding it in 1778. To the Hôpital Necker is attached M. Huchard, an authority of European reputation on all matters cardio-vascular. He used to be at the Hôpital Bichat and was still there in the early "nineties" when he published his classical work on "Diseases of the Heart." His pride in his present post knows no bounds, for it was at this hospital that the famous Laennec did all his best work, and of Laennec M. Huchard speaks with an admiration and a veneration amounting almost to adoration. He is the fortunate possessor of one of the "master's" stethoscopes, which he handles—and when he gives it to you, begs you to handle—with becoming reverence. It is a commonplace enough looking implement; a straight tube of wood with a hole which is small considering the inordinate thickness of the wood, and no ear-piece. But it belonged to the master and M. Huchard guards his relic with all the jealousy of the enthusiast.

To the question, "Is this a hospital special to the diseases of the heart?" came a most emphatic negative. M. Huchard is a great teacher, but he is not in any sense of the term a specialist. His teaching is appreciated not only because he is clear and is possessed, conspicuously possessed, even among the French, of the inestimable gift of striking and even dramatic expression, but he is a strong man—strong enough, that is, to admit his errors and to use them as texts whereon to hang lessons for his pupils. In his class-room is a letter-box into which any student may at any time, anonymously or otherwise, place a piece of paper begging him to explain over again some matter which did not appear sufficiently clear and into which may be put a round robin signed by not less than ten requesting him to deal at his next lecture with a particular subject. M. Huchard's paternal attitude towards his pupils is further evidenced by the fact that his lecture-room was reconstructed mainly at his own expense and it is characteristic that he should have dedicated it, under the name of Amphithéâtre Laennec, to the memory of his great predecessor. And yet, in spite of the treasured stethoscope, which is produced only on state occasions, and in spite of other evidences of homage to his greatness, the auscultatory methods of the master are no more respected here than they seem to be elsewhere in Paris. The ear is applied to the chest in the vast majority of the cases and the stethoscope is used but seldom. This may have its advantages, especially in listening to the back and in men, but in the case of a woman with what they call in Paris an opulent bust the practice has disadvantages, both practical and sentimental, which are not to be gainsaid.

The beds at Necker are less crowded than they are at other hospitals and the wards are wider, but the same sense of scrupulous cleanliness pervades the place and the same admirable system obtains of washable overalls for those whose work brings them into immediate contact with the patients. The water-closets and lavatories, which are well separated from the wards, seemed to leave something to be desired. They are not as modern in construction as they might be and the faint ammoniacal odour suggested that they were not working properly. The female student is much in evidence at Necker. She is, indeed, everywhere and though at home we have become absolutely reconciled to her presence she still seems out of place in Paris. This is probably due to the views concerning what is suitable for a *jeune fille* which are known to obtain all over France and which differ considerably from those held on this side of the channel.

The number of English medical "*suivant le service*" of Professor Huchard was very considerable, and upon several occasions he gave a demonstration of the manner in which he conducted his work at the hospital. He explained that an exhibition of cases was, according to his view, hardly desired by his English *confrères* and he preferred to try to interest them by the exhibition of new instruments and methods of treatment, &c. Among the former he showed a water spirometer so constructed that the quantity of water displaced (and therefore air expired) could be read off on a graduated scale. He used it for the comparison of results before and after certain forms of treatment. Several of the visitors were asked to test their expiratory capacity; none came up to the professor's requirements until one physician at last made a record. Everyone laughed and Professor Huchard, approaching this gentleman, said: "Mais, mon cher, à la fin il faudra vous tuer! vous ne mourrez jamais!" After this a sphygmomanometer was exhibited which, it appears, is in constant use. The visitors were then shown some curves representing the extraordinary increase in strength shown by Professor Huchard himself as a result of the ingestion of sodium formate (in suitable doses). These charts are certainly very remarkable and a full account of this method of treatment may be found in Professor Huchard's brochure entitled "Action Toni-musculaire et diurétique de l'acide formie et des formiates." Passing from the wards to another part of the hospital Professor Huchard showed the visitors the lecture room (clinical theatre) and out-patient department which he had had built at his own expense. He gave an account of his method of practical instruction and explained that he encouraged the students, in the way already described, to ask for further elucidation of some subject not thoroughly understood. He then pointed to the bust of Laennec (for whose memory he professes the greatest veneration) and remarked that he had named the lecture room after him—Amphithéâtre Laennec. To each party of visitors he triumphantly produced the stethoscope which had belonged to the great physician. The visitors shortly after took leave of the genial professor, carrying away with them a very pleasant recollection of his charming personality.

THE SALPÊTRIÈRE.

Who has not heard of the Salpêtrière? Further, it might be asked, what need is there of a description of the place? Well, all the details regarding the square area it occupies, the vast assembly of patients, nurses, officials, workmen, &c., it includes can be learned by perusing the proper guide-books. These must have been described over and over again and their repetition would weary the initiated reader. To realise the vastness of the place it must be seen. It is a small town in itself. Suffice it to say that its origin dates from 1656 when buildings which were used for the manufacture of saltpetre were transformed by royal edict into wards or dormitories for the "renfermement des pauvres femmes." In 1684 the "Hôpital de la Force" was constructed for the detention of "femmes et filles de mauvaise vie." Successive enlargements in the eighteenth century resulted in the monumental establishment which we see at the present day. The regulation number of beds is stated to be 3812, and many interesting statues (including that of Charcot), monuments, medallions, busts, &c., worthy of attention are to be met with in different parts of the institution. In the salon of the director may be seen a large picture attributed to Mignard (an allegory to the glory of Louis XIV., the founder of the hospice), and in the "Salle des Cours" is a remarkable picture of Tony Robert Fleury representing Pinel casting off the chains of those mentally affected. The constitution of the staff is, of course, well known, but we are here concerned with the work of Professor Déjerine who was good enough to induct the visitors into the mysteries of one of his wards. Again it must be admitted that his method of procedure is well known to the neurologists in England. Confirmation of this statement consists in the fact that Dr. Alexander Bruce and Dr. Byrom Bramwell are working on his line of treatment in Edinburgh with marked success. It may be mentioned here that besides the above-mentioned gentlemen, Professor Déjerine was accompanied this morning by Sir William Broadbent, Sir Dyce Duckworth, Dr. C. E. Beevor, Dr. F. W. Mott, Dr. H. Morley Fletcher, Dr. C. S. de Segundo, and others. It is interesting to note that Dr. Huchard, of the Necker Hospital, accompanied the visitors and engaged in friendly passages of arms with Professor Déjerine. After giving a demonstration on some perfect sections of the *entire* cerebrum for microscopic investigation, declaring at the same time that macroscopic work was a thing of

the past, the professor led the way to the Bâtiment Jacquard, in which he had instituted some ten years ago a ward for the reception of poor patients suffering from what he termed "psychoneuroses." He maintained that his method of treatment resulted in a perfect cure of 95 per cent. of the cases and that the relapses numbered just under 5 per cent. of those treated. The effect on entering the ward is to some extent startling. The visitor is brought face to face with a number of beds rather closely apposed, each of which is completely inclosed by white curtains. As Professor Déjerine explained, the essence of the treatment consists in "isolation." No drug of any kind is administered. Each patient is visited in the morning by Professor Déjerine and in the evening by the house physician, an expert and very experienced sister ministering to the patient's wants during the interval. On admission the patients are placed on a milk diet, commencing with about half a pint (in small doses hourly administered) and gradually but rapidly raised to five litres (roughly eight and three-quarter pints) in the 24 hours. Comparatively little trouble is experienced in arriving at this point. The patients are mostly neurasthenics and "gastropaths." Their previous history almost invariably represents a condition of worry, over-exertion, anxiety, sudden mental shock, &c. On admission a certain number are hysterical and noisy. These are at once removed to a ward above. 24 hours later they are almost invariably fit to be sent to the main ward. The sole treatment consists in reasoning with these people and encouraging them to believe that they will eventually be cured, and the extraordinary part is that they are cured, and that they do not relapse. There is no question of hypnotism here—the idea is utterly scouted. It is difficult to get the uninitiated to believe in the efficacy of the treatment. The very able "interne" with whom the visitors conversed admitted the weariness and fatigue of the work, but suggested that the results fully compensated him for all the labour involved. A number of cases were shown but only a few will be here considered and these will be the "gastropaths" of whom Professor Déjerine is justly proud. Most of them were admitted in a state of great emaciation, having suffered for many years—in one case for 16 years. This particular case (in No. 16 bed) had lived on about a couple of pints of milk and a boiled egg daily for years. She had been subjected to lavage, massage, Weir Mitchell treatment, &c., without benefit. Since admission on Feb. 22nd to date she has gained 21 pounds in weight and is now eating solid food. One more case must suffice—the most formidable with which he had to deal (No. 21 bed) a very grave neurasthenic who had suffered from vesical irritability for ten years and had been subjected to various surgical procedures. Careful investigation had revealed no lesion of the bladder. The treatment had extended over five months and there was a gain in weight of 18 pounds. Recovery was complete. This patient cheerfully recited her experiences to the visitors. Every now and then cases are admitted which show no improvement after two or three months of treatment. They generally turn out to be cases only suitable for an asylum. It must be remembered that these remarkable results of "persuasion morale" are certainly largely due to the strong personality of Professor Déjerine—the man of the iron hand in the velvet glove, as he was described by one of the visitors. And what is more, he is able to infuse some of this strong personal element into his subordinates. He willingly bore testimony to the capable manner in which his house physician practically dragged one case out of the grave.

HÔPITAL LAENNEC.

Though the Hôpital Laennec is old, very old, one would never think so either to look at it from the outside or to inspect it from within. It was built between 1635 and 1649 and has had its vicissitudes. In 1801 it degenerated into an infirmary for female incurables and was altogether closed for medical purposes in 1869. The events of 1870 necessitating more accommodation than was available it was reopened as a sort of chapel of ease to the Charité and was closed again in 1871. It was again used temporarily in 1874 and was finally reopened as a regular hospital in 1878 under the honoured name which it now bears. It occupies a large superficial area about two-thirds of which is taken up by the courtyards and gardens. In the centre of the most spacious of the latter is the new operating theatre. This is a separate cottage-like looking building which contains but five beds in addition to the operating room and the sterilising rooms. It is here that all the major operations are performed, the old walls of the main building, carefully limewashed and disinfected though they be, being regarded as scarcely suitable for anxious cases. There is a theatre in this main building which even to the critical eye seemed to leave very little to be desired. The laboratories and post-mortem rooms are admirably placed and equipped, causing one to wonder how much of the original place now remains. If there has not been a tremendous internal revolution the original architect must have had an imaginative—nay, even a prophetic—soul. On entering a ward what strikes an English eye immediately is what we should regard as the crowding, one could almost say herding, together of the beds. And yet in a few minutes it all seems quite natural, for the atmosphere is as pure and sweet as in any English hospital and the light as plentiful as in the best of them. And, after all, what does "crowding" signify if it does not mean the undue exhaustion of the one and the illegitimate exclusion of the other? There is a remarkable cleanliness about these wards, a cleanliness which is obstrusive even to the eye of one who is accustomed to all that is best in the English hospitals. One wonders why our physicians, house physicians, and clinical clerks do not wear the spotless overalls which are as much *de rigueur* in the medical wards of Paris as they are in the surgical at home. The custom does not benefit the patients, of course, but even medical men may sometimes be allowed to entertain considerations which are not wholly altruistic. In the methods of the physician one is immediately profoundly impressed by the almost complete absence of the stethoscope and on inquiry it would seem that not at the Hôpital Laennec alone but all over Paris it has fallen into disuse. Where the exact localisation of a particular sound is desirable, it is asked for, but neither the physician nor the students carry one. When it is produced it is of the monaural type, of wood in one piece or of metal; such a thing as a binaural stethoscope seems to be absolutely unknown. This is sufficiently striking as an isolated fact, but in a hospital called after Laennec, the author of "L'Auscultation Médiate," it is nothing short of astounding. The sister carries a napkin (which is artistically marked on one side so as to insure that the same side is always in contact with the ear of the auscultator); this is applied to the patient's chest and the physician listens. They say that they can better appreciate the finer departures from the normal by this method, even where the heart sounds are concerned. This is, to say the least of it, interesting and it supplies food for thought. On the occasion of our visit the distinguished physician, Professor Landouzy, who bids fair to make the Hôpital Laennec almost as famous as Bright made Guy's, was absent, but his *chef-de-clinique*, Dr. Lortat-Jacob, explained matters with all the dignity, modesty, and politeness which distinguishes the experienced and cultured physician, more, perhaps in France than elsewhere. This gentleman did much—as much, indeed, as could be done—to compensate for the absence of his chief, which was, in point of fact, irreparable. Dr. Landouzy is the professor of clinical medicine at the university and is recognised as a prince among clinical teachers and demonstrators even in that country of great clinicians. His great *forte* is physical examination but he has another which is almost as great and that is verbal exposition. The combination, as may well be imagined, produces a clinical teacher who is second to none in Europe and who yet bears his distinction with the humility of all true distinction and a grace which is altogether Gallic. His absence from the hospital was explained by the fact that he was entertaining a large party of English visitors to luncheon at the Café Voisin. Among those to enjoy his hospitality were Professor Clifford Allbutt, Dr. P. H. Pye-Smith, Dr. Dawson Williams, Dr. H. Morley Fletcher, Dr. S. H. Habershon, Dr. Frederick T. Roberts, Dr. de la Parenne of Lachon, Dr. Forestier of Aix-les-Bains, Professor Gaucher, Dr. Carron de la Carrière, and numerous ladies, in all about 100 guests. Dr. Landouzy made a short speech of welcome, full of point and wit, to which Professor Clifford Allbutt replied in an appreciative and tactful vein. Such a gathering being an essential feature of the French view of the obligations of hospitality the absence of Dr. Landouzy from his hospital was not surprising, but the visitors to Laennec with its 633 beds regretted the absence of its guiding spirit. It should be noticed that the Hôpital Laennec, in common with so many of the other hospitals, including the Salpêtrière, is partly an infirmary, about one-third of its accommodation being reserved, and very strictly reserved, for sufferers from chronic and incurable diseases.

THE EXCURSION TO CHANTILLY.

On Friday afternoon, by two special trains composed exclusively of first-class and corridor carriages, the British visitors and many of their French friends were conveyed to Chantilly, about 30 miles from Paris. Here brakes were waiting at the station to convey them to the magnificent mansion which the late Duc d'Aumale left to the Institute of France. The weather lent itself to the excursion, as the French say, and the blue sky added infinitely to the beauty of forest and park. The mansion is still surrounded by the broad and deep moat that protected the ancient fortress and cattle of the Condé family. Now the ground floor of this princely residence has been converted into a museum where the marvellous collection of works of art that belonged to the Duc d'Aumale are on view. Since these priceless treasures have become the property of the institute arrangements have been made to admit the public to see them on Sundays. There would not be enough visitors on any other day, as Chantilly is too far from Paris. But this is the first time that visitors and guests have been taken in a body to see Chantilly. Doubtless this will become a popular means of entertaining delegations and members of congresses. The British medical men have in any case been the first to enjoy this advantage. Undoubtedly it was an advantage; indeed, it was a real privilege. None failed to admire the beauties of the château surrounded by a vast expanse of ornamental waters, alternating with smooth green lawns. Then beyond there was the solemn dignity of the long avenues of lofty trees which had been made to stand straight and stiff like sentinels and to shade the road with an arch of branches. Here and there, as a bright contrast in colour, shape, and substance, a snow-white statue rose from the green sward and perpetuated the memory of the patron gods and goddesses. Within the mansion the British visitors wandered from room to room, sometimes admiring the furniture, the art decorations, and curios, but more often stopping to study originals of the many pictures that are, for the most part, known throughout the world by reproductions. There were exquisite portraits, many of historical interest, dating from the fifteenth century. Of the old masters there was a Botticelli, a Teniers, two or three Raphaels, and many others. Then, after some pictures by Mme. Lebrun and Greuse there were battle scenes, many in which the Orleanist family were concerned, by Horace Verney, Detaile, and Neuville. A volume might be written on the history and the beauty of these art paintings. In time the visitors had seen all and received many explanations from M. Macon, one of the conservators of the museum. They then strolled through the park and were entertained to tea, wine, and light refreshments at the Grande Condé Hotel. The special trains brought them back to Paris shortly after six o'clock.

THEATRICAL ENTERTAINMENT AT THE AUTOMOBILE CLUB.

In one of the majestic and palatial buildings overlooking the Place de la Concorde the members of the Automobile Club have contrived to construct a large theatre. Considering that it is a private theatre and part of the club it is, indeed, a very large theatre. Nevertheless, nearly every seat was occupied by the British visitors and their numerous French friends. The entertainment did not begin till nearly 10 o'clock, so there was time to dress and to dine after returning from the excursion to Chantilly. But, on the other hand, the performance was not over till one in the morning. Yet it was worth while remaining to the end, for some excellent performers from the Comédie Française, the Grand Opera, and the Opéra Comique lent their aid. They were, however, preceded by Madame Bertimy who recited verses composed for the occasion by M. Jean Robiquet. These verses recorded the satires of Molière on the physicians of his time but insisted that even Molière would be pleased to be ill if he could only have such physicians as those present to treat him. Then there was a flattering allusion to the reception in London, and these visits, though short, sufficed to cement the alliance of the two peoples, and to-day Paris was receiving the English princes of science as she had received the British King—

> "Soyez les bien-venus sur la terre de France!
> Entre nos deux pays il n'est plus de détroit,
> Et nous vous recevons, Princes de la Science,
> Comme le grand Paris a reçu votre Roi!"

After the two National Anthems had been duly honoured members of the Opéra Comique troupe gave the first act of *Lakmé*, a chorus sang some old French songs, and then an opportunity occurred for a great ovation. Madame Jeanne Raunay, the widow of a medical practitioner and at present engaged at the Opéra Comique, sang the Nymph solo from the opera *Circé*. Now the words of this opera are by Professor Charles Richet of the Paris Academy, whom everyone present knew, but the music is by "Raoul Brunel" and it is not so well known that this name conceals that of a well-known physicism. Indeed, it is to him that the visitors owe the organisation of the entertainment at the Automobile Club. So here was an occasion of applauding the singing of the widow of a medical man, the poetry of a celebrated professor of psychology (who has recently been elected President of the Society for Psychical Research), and another medical man who is also a distinguished musical composer. Needless to say that all present availed themselves fully of this opportunity. After more singing gavottes and minuets were admirably danced by members of the Grand Opera staff.

The interval or *entr'acte* was utilised in visiting the buffet and partaking of the wines and light delicacies that have been ready at every halting place during this most hospitable reception. Afterwards the English visitors had a good example of French broad fun and humour, the one act farce, *Le Petit Hôtel*, by Meilhac and Halévy, being played to the great enjoyment of those who knew French well enough thoroughly to follow the words. What else could be expected from the authors of the librettoes of Offenbach's operettas? According to the programme the performance was to end with the beautiful pastoral ballet called *La Guirlande*, but there were mysterious rumours of some surprise in store. The surprise was heralded after the conclusion of the ballet by the extinction of the lights. Then there was a kinematograph and the visitors had the pleasure of seeing themselves as they appeared a few hours previously when they were leaving the train at Chantilly. Undoubtedly this was sharp work, for there was but little time to develop the photographs. Yet the experiment was eminently successful and elicited loud praise.

SATURDAY, MAY 13TH.

THE HERTFORD BRITISH HOSPITAL.

A large proportion of the party put in an appearance at the Hertford British Hospital at Levallois-Perret, some little distance outside the fortifications, at 2.30 P.M. on Saturday. They were received by the committee, Mr. A. P. Inglis, consul general, Sir Henry Austin Lee, of the English Embassy, Mr. Coleman, Mr. John G. Pilter, and Mr. Roselli, together with the medical and surgical staff, Dr. L. N. Robinson, Dr. A. A. Warden, Professor Poirier, and the resident medical officer, Dr. Glendinning, and the secretary, Mr. Reginald Geoling. We may recall that this hospital dates back to 1870, *l'année terrible*, when Sir Richard Wallace opened two wards and a dispensary adjoining his hospital for the wounded in the rue d'Agueseau for the reception of the sick British poor. In 1871 the hospital was transferred to commodious premises near the actual site and a committee consisting of Sir H. (then Mr.) Austin Lee, Sir John Rose Cormack, and Dr. Alan Herbert. It was definitely inaugurated in November of that year. The present building was erected in 1879 and was opened by Lord Lyons, the British Ambassador, in April. Their Royal Highnesses the Prince and Princess of Wales paid a long visit to the hospital in June of the same year and the occasion was commemorated by naming the two principal wards "Albert Edward" and "Alexandra" respectively. In July, 1900, Lady Wallace made over the hospital to the British Government by deed when the present committee of management was appointed. The drainage was brought up to date, the electric light was installed, and adequate ventilation was provided. A fully equipped operating room was added in 1904. The hospital is a handsome stone structure standing in its own grounds at some distance from the street (Avenue de Villiers). Its architecture is ecclesiastically Gothic in style and it is remarkably spacious and well lighted. It contains some 40 beds and cots and in addition to the general wards there are a number of private wards for patients of a better social class who can pay for the accommodation.

The English population of Paris is a large one and comprises many poor and it will readily be believed that the hospital since its foundation has rendered immense service to those who have become incapacitated for work by disease or accident and to whom skilled

attention at the hands of English medical men and nurses is necessarily a source of great comfort. The number of in-patients averages upwards of 300 annually and of out-patients over 2000. The visitors were taken round the wards and their presence excited great interest among the patients who had been looking forward to the occasion. There was no speechmaking beyond the formal welcome extended by the committee and the medical staff, the rest of the time being devoted to inspection of the new operating theatres, the system of accounts, and other technical details. The visitors left with a feeling of great and sincere satisfaction that their fellow countrymen in Paris are so well cared for, thanks to the munificence of the late Sir Richard Wallace.

THE PASTEUR INSTITUTE.

It is a far cry from Levallois-Perret to the rue Dutot, where the buildings of the Pasteur Institute are located, but in motor-cars and carriages the visitors, accompanied by their lady friends, arrived in large numbers—probably in totality—at 3.45 P.M. They were received by the director, Dr. Roux, who we regretted to see did not appear to be in the best of health. After a formal welcome in the library the visitors, together with Sir Francis Bertie, the British Ambassador, and Lady Bertie, Madame Pasteur, and many eminent members of the French medical world, adjourned to the basement where the mausoleum of the great Pasteur is placed—an imposing *caveau* richly adorned with glittering mosaic and illuminated with inscriptions recording the life-long devotion to the pursuit of scientific truth of the great French man of science. Standing with his back to the wrought-iron gates of the tomb Dr. J. Kingston Fowler, speaking as dean of the Medical Faculty of the University of London, delivered an eloquent address in French, enunciated with a purity of accent and a freedom of diction that excited the admiration and surprise of our French hosts. Addressing himself to the Director and to Madame Pasteur, he asked permission to deposit a wreath on the tomb of the great master to whose labours in the cause of science and humanity the institute was a worthy and becoming monument. But it would be a pity to translate into English words that sounded so well in the language in which they were delivered. We give the original.

Monsieur le Directeur,—J'ose croire qu'en ma qualité de Doyen de la Faculté de Médecine de Londres, vous et Madame Pasteur me permettrez de déposer cette couronne sur le tombeau du maître qui a tant fait pour la science et l'humanité, et dont cet institut même rappelle à l'univers les travaux accomplis. Cet hommage, je le rends au nom des quatre cents professeurs de la Faculté de Médecine, je veux y associer de plus tous ceux qui exercent notre profession, tous ceux qui visitent aujourd'hui ce pays et cette ville dont les traditions artistiques, littéraires et scientifiques sont connues du monde entier. Le souvenir et l'exemple du grand Français que fut Pasteur, inspireront toujours les hommes qui, comme lui, voudront se dévouer à la cause universelle de la science. Les découvertes de Pasteur dans le domaine de la physique et de la chimie, ses recherches à la fois ardentes et patientes, sur les causes de la fermentation, sur les causes des maladies chez l'homme et chez l'animal, ont sauvé d'importantes industries et nous ont permis d'une manière plus efficace et plus sûre non seulement de soulager ceux qui souffrent, mais encore d'arracher à la mort bien des gens qui sans lui auraient péri. Je ne saurais mieux faire que de rappeler l'hommage rendu par un de ses plus éminents disciples, Lister: "Vos brillantes recherches m'ont prouvé l'évidence de la théorie des causes de la putréfaction par les organismes microbiens et m'ont fourni le seul principe sur lequel pouvait être basé le système antiseptique." Le dix-neuvième siècle marquera dans l'histoire par les découvertes de tout genre: les travaux de Pasteur suffiraient seuls à lui assigner une place prépondérante dans les annales de la science.

La science ne reconnait pas de frontières; elle réunit en une commune fraternité tous ceux qui se devouent à son service. De près ou de loin, tous ceux qui suivent les traces de Pasteur contribuent à rapprocher les peuples. Nous sommes convaincus que l'amitié entre la France et l'Angleterre ne cessera de croitre, que les deux nations travailleront d'un commun effort au progrès de la science et contribueront à la réalisation de ce but: la paix du monde.

The speech met with a cordial and sympathetic reception and was followed by one, also delivered in faultless French, by Dr. Augustus Waller, chief of the laboratories of the University of London, who insisted on the debt that humanity owed to Pasteur for his labours in the study of the infinitely little. Pasteur, indeed, was "*le médecin de la médecine*," in that he taught the medical profession the causes of many of the diseases which they were called upon to treat and incidentally pointed out the means of preventing and of curing them. He claimed that in years to come, when men could form a better conception of the services rendered by Pasteur to science for which we were yet far too near, it would be held that the greatest discovery of the nineteenth century was not steam or electricity but that made public by Pasteur who, in rendering service to France, had rendered incalculable services to humanity at large.

These eloquent periods were warmly applauded and the visitors then paid their homage to the illustrious dead by filing before the tomb.

They then took refreshments in the library where a medal commemorative of the occasion was presented to each visitor, after which they broke up into parties to inspect the various departments, the laboratories, and the Pasteur hospital. The latter lies behind the main block of buildings devoted to chemistry and biology and is now fast approaching completion. This institution, which was founded consequent upon the publicity given to the serum treatment of diphtheria at the Congress of Hygiene at Budapest, is due to the generosity of an anonymous benefactress. It is reserved for the treatment of microbial diseases by Pasteurian methods including, of course, the treatment of hydrophobia. Further funds were provided by Madame de Maillefer in memory of her husband and of her grandfather, Professor Baudelocque, whose memory has also been perpetuated by the celebrated lying-in institution that bears his name. This lady's generosity enabled the managers to install and to equip an out-patient department. The hospital comprises two pavilions, each containing 60 beds, installed on the cubicle system. On entrance the patient is taken into a cloakroom where he changes clothes, his own being taken away for purposes of disinfection. He is placed on a moveable bed and is transported by a lift to the room which he will occupy until convalescent. There is an admirably equipped surgical theatre (operating room) on the first floor. The building is constructed with special attention to the possibility of isolating any one part from the rest. Each room opens on to a spacious balcony which communicates at the angles with the corridors that separate each set of rooms from the others, thus enabling any particular cubicle to be isolated completely and effectually.

The rooms themselves are as aseptic as human ingenuity can contrive. The partitions are glazed to insure a maximum of light and nowhere are there any projections capable of retaining dust. The floor is of glazed stoneware and the non-glazed walls are covered with porcelain tiles. All angles are rounded off and the cleansing is done by copious ablutions, brooms and dusters being rigorously banished. Each room has two doors, on opposite sides, one for the service *vis* the corridor and the other giving access to the balcony should special isolation be indicated. They are simply furnished, everything being in metal or porcelain. Special rooms are set apart for convalescing patients and on the second floor rooms are reserved for patients accompanied by their relatives. Only one of the pavilions is at present in working order, the completion of the second having been intentionally postponed in order to get the benefit of actual experience in determining its distribution and general arrangements.

The Institut Pasteur, as briefly described, differs from most scientific and medical institutions in France in that its inception, realisation, and maintenance are due to private initiative. As such it affords a valuable object lesson of what can be accomplished by individual effort unaided by the State—a lesson that may not be thrown away on our neighbours across the channel, who have inherited an almost unconquerable tendency to look to the authorities to initiate and to organise all institutions of public importance; indeed, the possible scope of private initiative was one of the things that most impressed our French *confrères* when they saw in our London hospitals a striking example thereof. There was so much to be seen and admired and so many explanations to be given and received that the visit was a long one; indeed, by the time it was over it was time to prepare for the banquet that marks the conclusion of a "scientific excursion" that we trust will be fruitful in cementing the friendship between us.

CLINIQUE BAUDELOCQUE.

No visitor interested in obstetrics could fail to avail himself of the exceptional opportunity afforded to study the organisation and the management of the admirable clinique in

the Boulevard de Port Royal of which Professor Pinard is the presiding genius. Each morning at 9 o'clock a party crossed Paris with this object in view and were cordially received by the staff. The hospital is an extensive light wooden structure all on the ground floor, well lighted on every hand, with ample provision for ventilation. It contains 110 beds and the visitor is struck at once by the large allowance of floor space allotted to the beds, greatly in excess of that provided in the general hospitals of Paris. The staff, senior and junior, including the students attached to the service, are dressed in brown holland overalls and the most scrupulous cleanliness is everywhere enforced. We may recall that the clinique was instituted some 16 years ago for the express purpose of providing students with facilities for the study of practical obstetrics, and Professor Pinard on his appointment to the newly established chair availed himself of the opportunity to carry into effect certain principles thanks to which the mortality has been gradually reduced until actually it does not exceed 0·3 per cent. (six deaths on an average of 2500 labours).

The visitors had an opportunity of witnessing various gynæcological operations performed by Dr. Faure and of seeing how the *service d'accouchements* is organised. On Friday they assisted at the clinical demonstration conducted by Professor Pinard when the students in charge of recent labours are called upon to render an account of their stewardship *coram populo* and the salient features of each are emphasised for the information of the others. One point on which special stress was laid was the importance of ascertaining the weight of the placenta in all cases of premature labour in order to assist in the determination of the cause of the premature expulsion. The demonstration was followed by a clinical lecture on rupture of the uterus based on a very interesting and instructive case. A young primipara, whose conjugate diameter, carefully and repeatedly measured, was ascertained to be 9·2 centimetres, in the course of a tedious labour suddenly complained of pain at the fundus of the uterus. At the same time the contour of the abdomen was noted to have changed and on careful palpation a sort of gutter could be made out in the uterine wall. The presenting part (the forehead as it turned out) receded and the diagnosis of rupture of the uterus was arrived at, in spite of the fact that the patient's general condition was comparatively satisfactory. The uterus and the fœtus were forthwith removed but the patient succumbed three days later and the anatomical specimens were shown. Professor Pinard attributed rupture to the thinning of the uterine wall caused by the pressure of the forehead plus the disintegrating effect of the œdema which was well marked. At the post-mortem examination it was found that the conjugate diameter was in reality only seven centimetres owing to compression of the pubic rami. The nature of the presentation was masked by an enormous caput succedaneum, otherwise in all probability earlier intervention would have been judged necessary. The impression carried away by the visitors was that, as a school of practical midwifery, the Clinique Baudelocque occupies a foremost place, not only in regard to the wealth of material but also, and especially, in regard to the eminently practical manner in which the instruction is imparted.

HÔPITAL LARIBOISIÈRE.

On Saturday many surgeons visited the Lariboisière Hospital and there saw Professor Hartmann perform hysterectomy and partial gastrectomy. Among this number were Mr. W. H. Battle, Mr. W. Arbuthnot Lane, Mr. W. F. Brook of Swansea, Sir William Macewen, Mr. A. W. Mayo Robson, Mr. James Berry, and many others. Professor Hartmann's theatre was most up to date in its construction and well lighted. There was ample space for the audience so arranged that all could see. The entire wards, theatre, and attendants were some of the smartest seen by the visitors in Paris. A little sign of this smartness and finish was that the binder of the first patient was beautifully embroidered in red with the name of the ward, Civiale. The surgeon and his assistants made their ablutions at basins in the theatre so that all precautions were under the eye of the operator. Professor Hartmann performed the gastrectomy with the patient in a slightly Trendelenburg position. The glands along the lesser curve of the stomach were cleared out as high as the œsophagus when the coronary artery was ligatured. The operation was carried out on the lines recommended in Kocher's "Operative Surgery." The coaptive and hæmostatic and the invaginating sutures were commenced at both ends and when they met in the middle were knotted. Every fourth stitch or so was knotted by passing through the loop of the last stitch. The duodenum was sutured into the posterior surface of the part of the stomach left. Both in this case and the hysterectomy a drainage tube was inserted apparently because in the latter the Fallopian tubes were full of pus and in the former there was some escape of stomach contents. It is interesting to know that so experienced an abdominal surgeon as Professor Hartmann does not hesitate to use drainage whenever it may be at all advisable. Professor Hartmann's technique is marked by great care, neatness, and attention to detail and does not aim at brilliance or speed. A group of surgeons, including Mr. Mayo Robson and Sir William Macewen, paid a visit to M. Poirier's service on Saturday. The wards were decorated with flowers for the occasion—a souvenir of M. Poirier's English visit. They forthwith proceeded to the operating theatre where they witnessed M. Poirier perform a hysterectomy and sundry other operations. Some of the visitors having criticised the number of beds allotted to the wards, M. Poirier explained that accommodation had to be provided as required and that the accommodation available was far short of requirements.

HÔPITAL COCHIN.

The Hôpital Cochin does not appear to have been visited by such large numbers as some of the other hospitals. At the same time it presents several points of interest to which attention may be called. The old building (which is not attractive from the modern point of view and which is gradually being replaced by well-equipped pavilions) was founded in 1780 by M. Jean Denis Cochin, Vicar of St. Jacques-du-Haut-Pas, who expended a portion of his private fortune in its creation. Originally called Hospice Saint Jacques and comprising only a service of 38 beds, after various changes of name it is now known as Hôpital Cochin (after its founder) with a service of 175 beds. It was impossible to devote the time to a thorough exploration of the place so the visitors elected to view the modern "pavilion Potain" where they were received by Dr. Chauffard, the senior physician, who exerted himself thoroughly to make the visit as attractive as possible. It was not long before the fact was borne in upon the visitors that a great deal of work is got through there during the day and that by a judicious division of labour, and by the cheerful and earnest coöperation of the various members of the staff, many valuable observations on the clinical material available are placed on record. Dr. Chauffard himself made the remark that whereas, in his experience, the hospitals in London cater largely for the personal comfort of the patients, in Paris the necessity of utilising all available funds to their full extent results in the production of institutions where the homely appearance of the wards, &c., is subordinated to the effort to obtain every benefit (scientifically considered) from the clinical material presented by the erection and the support of well-equipped laboratories. Thus in one of the pavilions Dr. Chauffard is provided with a small sanctum, adjoining which is a moderately sized laboratory provided with an electrically driven centrifuge, the most modern microtome (Minot), microscopes, chemical reagents, &c., where, it appears, a considerable amount of work is done, notably in the constant and systematic examination of pathological fluids. As in the case of the Boucicaut Hospital, the wards are dome-shaped and the floors are tiled; the latter slope very gently towards a waste plug in the centre of the ward from which the water, which is used every morning in scrubbing down the floors, runs away. The number of beds and cubic content of the wards are marked on the wall near the door thus: 14 beds, 816 cubic metres. There is a moveable bath in each ward. Standing in the centre of the Salle Strauss is a table of about three metres by one metre, made of "lave émaillée," a very strong material with a smooth surface, which is unaltered by powerful reagents such as pure HNO_3. This description applies only to the pavilion which is being modernised, and in this connexion it is interesting to note that the funds for this purpose (500,000 francs) have been voted by the Assistance Publique who obtained the money from a percentage of the takings of the Pari-Mutuel, a self-adjusting betting machine (so to speak) which was instituted on the racecourses after the expulsion of the bookmakers. When the restoration of this hospital is completed the modern physician or surgeon must indeed be hard to please

who should express dissatisfaction with its architecture and appointments.

THE BANQUET.

On the evening of Saturday the visit came to a close with a banquet which was held at the Grand Hotel under the presidency of Professor Bouchard. The President of the Republic was represented officially. The British Ambassador, Sir Francis Bertie, was present and nerrly 400 covers were laid. The banquet was a difficult matter to organise, for it is not the custom in France to have very large banquets unless they be of a somewhat impromptu description. Fortunately, there is a hall for festivals at the Grand Hotel large enough for such an assembly. The staff which the hotel had at its service was also fully capable of coping with so great a service and the varied *ménu*. The wines were all served in due order to match with the dishes for which they were intended. The following is the *ménu* :—

Petite marmite.
Truite saumonée sauce Windsor.
Côtelettes d'agneau aux nouilles.
Cailles en chaufroix à la gelée.
Poularde du Mans truffée.
Salade.
Asperges d'Argenteuil sauce Chantilly.
Mousse glacée Alexandra.
Friandises.
Corbeilles de fruits.

VINS.

Tisane Saint-Marceaux.
Graves supérieur—Médoc vieux.
Château Cantegril—Château d'Issan 1898.
Corton 1889.
Saint Marceaux extra dry.
Café—Liqueurs.

It was printed on paper ornamented with shamrocks, thistles, and roses, gracefully entwined and tied together with a tricolour ribbon. Immediately above the President, and suspended in front of a balcony, were the arms of the Paris Faculty of Medicine in coloured glass and illuminated by electricity. Other suitable decorations, a profusion of flowers, and the beauty of the great hall itself made up a very imposing and brilliant sight. Unfortunately there were no ladies present. It would not have been possible to augment so largely the number of guests; but, on the other hand, the ladies were all provided with seats at the Grand Opera. The English ladies were formed in groups, each group having a French lady to act as hostess. At the opera the owners of private boxes gave them up and the other boxes were engaged so that all the boxes were filled by English ladies and the French ladies who accompanied them. Never has the Opera House presented so peculiar and graceful an appearance. Not only was there no gloomy male attire in the boxes but the beauty and cheerful colours of the ladies' dresses were further enhanced by the flowers that had been distributed among them. During the *entr'actes* very delicate bonbons were handed round. The performance consisted of the revival of Gluck's opera, *Armide*.

To return to the banquet, by Professor Bouchard's side were seated Lieutenant-Colonel Lamy, representing M. Loubet, President of the Republic, and Sir Francis Bertie, British Ambassador. There were also M. Lepine, prefect of police, and M. Mesureur, director of the poor-relief administration (Assistance Publique), and, naturally, the best known among the British visitors and the French hosts.

At dessert Professor BOUCHARD commenced the series of speeches. Unfortunately his voice could only reach those who were sitting quite close to him. He had received a telegram sent to him from Montélim by M. Loubet worded as follows :—

> I keenly regret that to-day I am not able to be in personal communication with the eminent men now gathered together in Paris. I beg you to tell your English and French colleagues that with all my heart I wish them success in their humanitarian task. The relations so happily established at London in 1904 and at Paris at this moment will surely serve to assure progress in the art of relieving human suffering and will contribute to maintain and to develop the cordiality established between two nations that are neighbours and friends.
>
> EMILE LOUBET.

This message was naturally greeted with very loud cheers, but the applause was still greater when Professor Bouchard further announced that he had been instructed by the President of the Republic to confer on Sir William Broadbent the Cross and Insignia of Commander of the Legion of Honour. Sir William Broadbent was called upon to stand up, Professor Bouchard then fastened the bright and much-coveted red ribbon round his neck, and embraced the new knight of this the greatest of French Orders. The band of the 24th Regiment of Infantry struck up the British National Anthem and the greatest enthusiasm prevailed. Professor Bouchard seized the opportunity to invite all present to drink the health of President Loubet and that of His Majesty King Edward, which was done with a fresh outburst of enthusiasm.

Professor Bouchard now strove, amid much noise and excitement, to conclude his speech. After alluding to the great discoveries of Jenner, Lister, and Pasteur, he said: "These are conquests that are more precious than those accomplished by the force of arms. Domination is one thing, moral domination is quite another matter—that which has for weapon but the light of truth and for means of action but the force of persuasion. In this magistrature of universal moral government we do not surrender the part which is ours and which is constantly increasing. The great medical discoveries achieved in both our countries are not foreign to the moral credit we enjoy. The peoples know what services we have rendered them. Consequently they will listen to us when in politics we press upon them words of justice and ask them to accept counsels of peace." Then alluding to the visit to the mansion which a prince of the House of Orleans had bestowed on the institute, Professor Bouchard said: "For long have the oppressed looked towards France and it is on the coast of England that the conquered in our civil discords and the princes in exile have found a safe refuge. Yesterday you admired at Chantilly the marvels which a sumptuous prince had accumulated. He was thus able to return to you some of the hospitality he had received in your country."

Sir WILLIAM BROADBENT now rose to reply but he was heard no better than the previous speaker. Therefore as only a few persons sitting close by could hear the others indulged in whispered conversation and this rendered it still more difficult to follow the speech. The same difficulty arose in regard to most of the speeches. Sir William Broadbent offered his thanks for the eloquent words that had been spoken. He thanked his colleagues of England and France for the enthusiasm with which they had greeted all allusions to the friendship of the two nations. After three such memorable days culminating in the great honour that had most unexpectedly been bestowed upon him by the President of the Republic through the intermediary of his friend, Professor Bouchard, he felt overwhelmed and could not find adequate expressions to describe his delight and gratitude. He then enumerated the various great receptions, that of the Faculty of Medicine, the resplendent scene at the Hôtel de Ville, the beauties of Chantilly, the theatrical representations at the Automobile Club, and everywhere the same cordiality, the same desire to see the two nations draw closer to each other. He could not but wonder at all this, particularly when he thought that it was all in honour not of some great potentate but simply for the sake of a few medical men. "This is how kings are received," said Sir William Broadbent; "you could not have done better for Edward the Pacificator who so loves us and loves you with us." At the Pasteur Institute and elsewhere he had heard speeches the memory of which he would always recall with pride. Their deepest emotion was experienced at the tomb of Pasteur, for his name was ever on their lips. And had not Pasteur preached the great gospel of Labour and Peace? But some sceptics might inquire what, after all, could the three days do in the history of the world. He was convinced that they had served to forge a link in the chain. Formerly chains were made with blows from great hammers. Now they were soldered with electric currents, but in their hearts and minds they possessed that which was stronger even than electricity.

Many cheers followed this speech and much was the surprise of the British visitors when the band struck up, "For he's a jolly good fellow."

Professor DEBOVE, dean of the Paris Faculty of Medicine, now spoke. He argued that there was nothing very remarkable in the fact that persons who belonged to the same profession should dine together. But when they considered how numerous they were, when they observed their unity of purpose and the spontaneous character of their demonstration then its importance became evident. That was even more evident when the fact was added that there had been no official instigation. They must then recognise that the force of attraction must indeed have been most powerful to bring about so imposing, so magnificent a result. Nothing had held them back, neither the distance, the lack of time, nor the sea that had to be crossed. It was by

the force of circumstances that their speeches assumed a political tone. This resulted from the good understanding between the two countries and from the peculiar situation in which medical men were placed. They were compelled to take part in the private life of all classes of the community; therefore they were best able to make an impression and to insure that the voice of reason should be heard. The medical practitioner was in a good position to recall the fact that there was a moral law governing the relations of nations with each other and that free peoples should unite to enforce its due observance. Thus united by the same love of science, by the desire to see justice and concord prevail, they could say that if their lips spoke different languages their hearts had but one desire.

Professor CLIFFORD ALLBUTT replied and said that if in the manipulation of words they had fallen short of the exigencies of the situation their feelings were none the less keen and sincere.

Dr. P. H. PYE-SMITH spoke in French and in English, recalling his experiences as a student in Paris.

Dr. STRAUSS, Government Military Inspector of the Paris Garrison, alluded to the services of the military surgeons of England, such as Hunter, Pringle, Longmore, and others. Their works were known and highly appreciated in France.

Surgeon-General KEOGH replied that he had found that the great traditions left by Baron Larrey, the chief surgeon of the armies of Napoleon I., were still piously preserved and remained as an example of what the military medical service should be. He then alluded to Paris as the capital of a country loved and admired throughout the world and spoke of the joy that all the British visitors had experienced during their visit.

Dr. LUCAS-CHAMPIONNIÈRE, as vice-president of the reception committee, spoke next, delivering half his remarks in French and the other half in English. He dealt on the fact that if medical men were patriots their scientific studies helped to lift them above any narrow and prejudiced form of patriotism.

Sir WILLIAM MACEWEN replied in English, and declared that even so he could not express all his gratitude. He alluded to the glories of Broca, Charcot, and Pasteur, who had laid the foundation of new schools.

Dr. BALZER, president of the Medical Society consisting of the staff of the different hospitals, explained the organisation of this body and its sympathy with the *entente cordiale*.

Dr. BRUCHET spoke as president of the council of the Society of District Practitioners. He represented the democracy of the medical profession. Their endeavour was to maintain unity within the ranks of the profession and to give to the weak and poor practitioner the strength derived from union and organisation. He raised his glass to the health of the general practitioners of England.

Dr. GEORGE OGILVIE'S amusing and thoroughly French speech should be given as he spoke it:—

Monsieur le Président, Messieurs, he said, mes paroles ce soir sortent difficilement. Je ne suis pas à mon aise, ni dans mon assiette—excusez l'expression, messieurs. Je me sens un peu timide, non parce que je parle devant vous, Monsieur le Président, devant l'élite du monde médical, mais ..... parce que c'est la première fois que j'essaie de m'exprimer en langue française depuis que je suis Chevalier de la Légion d'Honneur. Je suis très sensible à cette distinction, et je l'apprécie d'autant plus, qu'elle me vient de la France. Messieurs, ce soir, j'ai la tête aussi pleine d'idées que la ruche est pleine d'abeilles, et ces idées ont autant d'envie de sortir que la reine des abeilles en a de s'échapper pour prendre son vol nuptial au mois de juin. Mais cependant je crains bien que votre hospitalité française n'ait apporté un peu de trouble dans mes idées, et maintenant je ne rends compte, pour la première fois de ma vie, que les grandes pensées, et les grands dîners, ne sont pas compatibles. Votre hospitalité me rappelle une petite histoire qui est arrivée dans mon pays natal, le pays de Marie Stuart, un petit pays qui n'est pas tout à fait inconnu dans le vôtre, et dont Boieldieu a chanté l'hospitalité dans la Dame Blanche. Le maire d'une ville avait rencontré au marché le maire d'une ville voisine, et l'avait invité à dîner. Le dîner fut simple, mais copieux, et abondamment arrosé de vin capiteux. Au moment de se séparer, en reconduisant son invité à la porte, l'hôte lui dit, prenez garde aux marches, cet escalier est un vrai casse-cou, et quand vous arriverez au bas, vous verrez deux voitures—prenez la première, car la deuxième n'est pas là. Voilà, messieurs, l'hospitalité écossaise, et j'espère que la vôtre n'aura pas le même effet sur vos invités. Je ne crains rien pour moi-même, car je suis habitué à l'hospitalité française. Je m'aperçois, messieurs—par les rires de l'assistance—que l'humour écossais va de pair avec l'esprit gaulois; c'est comme le champagne sec, il faut avoir un goût cultivé pour l'apprécier. Messieurs, nous sommes à Paris, et nos quatre jours ont passé comme un éclair. Il n'y a pas d'étrangers qui vraiment connaissent Paris. Vos magnifiques boulevards, les musées du Louvre, les Champs Elysées, les Invalides, ne sont qu'une petite partie de Paris. Pour être capable d'apprécier le charme et la beauté de la ville lumière il faut être un mélange de savant, de philosophe, et de bohème. Suivre les pâles rayons de la lune éclairant la magnificence solennelle de Notre Dame, et la longue ligne d'édifices qui s'étend de la Sainte Chapelle aux Tuileries. Se tenir sur le Pont Neuf, quand les lampes jettent leur lueur blafarde sur les eaux agitées de la Seine, et assister à la lutte entre le soleil et les ténèbres. Parcourir les boulevards silencieux pendant que la cité est endormie. Ecouter le bourdonnement de la ruche à son réveil. Flâner dans les rues du Quartier Latin, où chaque pierre évoque des souvenirs. S'asseoir dans un petit café, dans une rue étroite, au milieu d'artistes atteints de cette maladie splendide—le génie. Voilà ce qui est voir et connaître Paris. Incomparable cité! Enfantée par la nature, vénérable par l'âge, mais toujours jeune. Pour la célébrer, il suffit d'exprimer ce qu'elle est, le monument et le foyer d'un grand peuple. Que dire de votre école de médecine, de vos hôpitaux, et de tous vos géants du passé—Louis, Trousseau, et Pasteur, qui ont fait jaillir la lumière des ténèbres—Larrey, Dupuytren, et Nélaton, qui ont mis de l'ordre, là ou était le chaos, et ..... j'en passe, je ne parle que des morts, car il m'en faudrait citer trop de vivants. Puissent ces génies nous servir à tous d'exemple dans la recherche de la vérité, suivant ce que disait Rousseau dans Emile—"Je sais que la vérité est dans les choses, et non dans mon esprit qui les juge, et que moins je mets du mien dans les jugements que j'en porte, plus je suis sur d'approcher de la vérité." Messieurs, notre devise doit être comme elle a été celle de nos devanciers, de rendre le petit coin de l'univers où nous vivons plus humain, plus sage, et plus heureux. Tout à mon admiration pour votre magnifique cité, et à mon affection pour vos géants du passé, j'allais presque oublier, Messieurs, de remercier les vivants pour leur splendide réception. ..... Que puis-je dire, sinon, merci à tous, millefois merci. Chacun de vous à été si gentil pour nous qu'il m'est impossible de vous nommer tous. Pendant qu'il me soit permis de citer un nom, celui du Dr. Triboulet, dont l'esprit d'organisation, et l'amabilité, ont assuré le succès de cette fête cordiale. Messieurs, permettez-moi de vous présenter, au nom de mes compatriotes, nos plus sincères remerciements—et ils partent du cœur—pour cette visite, qui vivra à jamais en notre mémoire. Messieurs, je crains d'avoir trop parlé, de vous avoir ennuyés, peut-être mon imagination a-t-elle pris le mors aux dents? Ce n'est pas ma faute, c'est la faute de ma nationalité, car quand l'imagination s'empare d'un Ecossais, elle le possède, dans le vieux sens biblique du mot, c'est comme un volcan, que rien ne peut éteindre. Encore un mot, Messieurs. A Québec, au Canada, reposent dans le même tombeau deux héros, un héros français, un héros anglais, Montcalm et Wolfe. Ils ont lutté tous deux sur le même champ de bataille. Ils ont perdu leur vie pour leur pays. Ils dorment maintenant, côte à côte, leur dernier sommeil, honorés également par l'Angleterre et par la France. Messieurs, dans les âges futurs, si on élève un monument à la France et à l'Angleterre, je souhaite qu'on lise sur son socle—La France et l'Angleterre, unies pour le progrès et pour la paix.

Dr. MONPROFIT spoke on behalf of the French provincial physicians and surgeons and after a few words from Mr. LYNN THOMAS the long series of toasts came to an end.

The dinner was the formal close of the meeting, after which the English visitors departed in two groups to visit Vichy, Lyons, Evian and Geneva, or Biarritz and Caen.

As well as the formal functions and receptions we must notice in a few words the individual hospitality of our French hosts. This was of the most lavish description; in fact, they all kept open house for their guests from Great Britain, the cordiality of the welcome being enhanced by the graceful tactfulness of the French ladies. Those who know how rigidly separate the French home life is kept from the life of affairs will understand that our French *confrères* were thus conferring upon their visitors a high compliment. It is quite impossible to chronicle all the festivities prepared by our kind hosts in their own homes, but amongst the French medical men who entertained were Dr. Bouchard, Dr. Lucas-Championnière, Dr. Huchard, Dr. Raoul Blondel, Dr. Landouzy, Dr. Marie, and Dr. Carré.

THE LANCET.

LONDON: SATURDAY, MAY 20, 1905.

The Financial Relations of the London Hospitals and their Medical Schools.

WE publish this week an address dealing with the financial relations that exist between the London hospitals and their associated medical schools by Mr. HENRY MORRIS, the representative of the Royal College of Surgeons of England upon the General Medical Council and senior surgeon to the Middlesex Hospital, who has studied the bearing of these relations with particular closeness. Mr. MORRIS fairly and forcibly puts his views upon a situation which is so familiar to our readers that it needs only the briefest *résumé* here. It is sufficient to say that the greater number of the medical schools of the metropolis are no longer self-supporting and that as a result they are, or have been, in greater or less measure subsidised by the hospitals. Into this matter a committee was appointed by King Edward's Hospital Fund to inquire, with the result that it reported that at least eight metropolitan medical schools have received pecuniary support from funds which should strictly have been devoted to the maintenance of the hospitals although at most or all of the schools the teachers have during the last decade done their work for practically no salaries, thus reducing expenditure to the utmost. This position—one, we would point out, entailing upon the medical teachers of the metropolis an amount of self-sacrifice which is very inadequately recognised—has been brought about, without entering into details, by two circumstances. The first is the increased cost of medical education and the second is the increased popularity of the provincial medical schools which are supported by students who until recently came as a matter of course "to walk" one of the London hospitals. The committee of the King's Fund, in making clear the unfortunate financial position, in no sense regarded the assistance given by the hospitals to the medical schools as constituting a vicious diversion of funds or an immoral breach of trust but it came strongly to the conclusion that for the future the moneys received for medical education and those received for the maintenance of the hospital must be kept separate. As a comment upon the bad economy of the arrangements for medical education which necessitated the keeping of 12 separate foci for instruction in the elementary and ancillary scientific branches Sir EDWARD FRY'S committee warmly endorsed the plan of the University of London for starting a Medical Institute for the centralised teaching of such subjects. Such is, in brief, the admitted position and Mr. MORRIS'S oration amounts to a distinct opposition to the views of Sir EDWARD FRY'S committee. Mr. MORRIS recognises the plight of the schools perfectly but he does not agree that a central school would have the result of relieving or improving it.

In the first place, Mr. MORRIS considers that medical education resulting in exact knowledge, and hence in scientific treatment, was, or should have been, one of the objects of the benefactors of hospitals, so that the question of immoral diversion of funds he does not consider to arise. But we must all see the necessity for medical charity to be above suspicion. We must be able to close the mouth of criticism whether honest or whether merely posing as care for the public weal, and the only way in which this can be effected is by rigidly keeping the hospital moneys for the support of the hospital. Mr. MORRIS points out that the hospitals owe more to the medical schools than the medical schools owe to the hospitals; and in a sense this is undoubtedly true, but if it is not absolutely sure that the hospitals have the power to pay the debt they must not be allowed to make the attempt. Nor is it any excuse for irregular finance to plead that the irregularity is only a little one. The amount paid by the hospitals to the medical schools is relatively very small when the huge outgoings of the big general hospitals are considered, and even the handsome contributions made to hospital expenses by the King's Fund only meet a small percentage of the absolutely unavoidable expenses. Still, it is clear that no hospital should run counter to the wishes of the King's Fund, for this Fund and the Metropolitan Hospital Sunday Fund represent order and organisation in medical charity, and as such are regarded as public safeguards. So that for the future the medical schools of the metropolis, with a continually dropping list of entries, will receive nothing save the students' fees for their support unless they can promptly institute special school funds. This is the course which Mr. MORRIS recommends should be taken rather than the adoption of the centralisation scheme of the University of London, for that scheme he finds absolutely uneconomical, unscientific, and impracticable. He points out that the central institute is not yet built, that it will cost an enormous sum to build it and another to endow it, and the result must be, he thinks, that in the end the medical student would require considerably more money per head to educate him than he now costs. Mr. MORRIS argues with conviction that anatomy and physiology should never be divorced from the general study of disease, as a knowledge of these subjects remains, and must always remain, an integral part of the practice of medicine, he dwells on the vast size of London as an obstacle to the utility of a central medical institution to be placed in South Kensington, and he pertinently asks what is to be done now, as it is evident that the central institution, whatever its success may be when it is a going concern, will not be ready to do its work for some time.

Our readers know that we favour strongly the idea of a central institution and although Mr. MORRIS'S position is in many respects a strong one—and everyone should read his address and learn for himself how forcibly the situation can be described from the other side—he has not been able to alter our view. It seems to us that there will be a most valuable economy of labour by teaching

all the preliminary medical studies at a central institute, in time there will, we believe, be also a saving of money, and medical education will be improved much in all its later stages by the more orderly and satisfactory grounding that the students will receive. The vastness of London can be got over by having more than one amalgamated school and the difficulties owing to the delay that must occur before the central institute, as devised by the University of London, is in working order can probably also be met by the use of temporary sub-centres. But these are matters on which the medical profession ought now to be receiving more information from those actually interested in the promotion of the central institute. The arrangements by which sub-centres could do the work of the central institute for the time being ought to be arrived at soon and the medical schools of the metropolis ought to know their individual chances under such a temporary scheme. The sub-centres would have their quarters at existing medical schools and the other medical schools ought to know as soon as possible what steps will be taken to safeguard their property in their pupils. The movement for concentration has actually commenced with the transfer by Westminster Hospital Medical School of their students to King's College Medical School for instruction in the subjects of the preliminary and intermediate examinations. An arrangement has been made by which the students will remain students of Westminster, which is satisfactory hearing. The unrivalled clinical teaching in the wards of the London hospitals must not be jeopardised by the retention as permanent students at two or three centres of all the attendants at the scientific classes.

The Relation of Milk Depôts to the Public Health.

IT is a strange satire upon preventive medicine to have to admit that although our general death-rate has undergone, and is still undergoing, a steady decline our infantile mortality should show not only no substantial fall but even in some instances a tendency to rise. It is difficult to believe that none of the forces which have been associated with the reduction of the general mortality should have been without influence upon our infantile mortality, to admit, in fact, that the improved well-being of the poorer classes, their better housing, their higher wages, their improved water- and air-supply, and the better regulation of refuse collection, should, in so far as the infants are concerned, be without effect, more especially when to these considerations we have to add over a quarter of a century of compulsory education. Still, if we claim such good results we are apparently compelled to conclude that this increased well-being has brought with it fresh forces which entirely, and in some cases more than, counterbalance the good, in so far at least as the infants of the working classes are concerned. Probably, however, this is a sound conclusion, and in a measure the increased prevalence of urban conditions, the disinclination and, at times, inability of mothers to suckle their young, female labour, and the diffusion of cheap brands of skimmed milk and of artificial foods are counteracting the improvements which obtain in other respects. In short, the high infantile mortality of the present day is an exceedingly complex matter and is the result of many forces. Those, therefore, who seek to attribute it entirely to an unwholesome milk-supply are eminently unscientific persons who must be classed with those who seek "to stamp out" pulmonary tuberculosis by the use of sanatoriums alone. But, this notwithstanding, there can be no reasonable doubt that a very substantial share in the causation of infantile mortality, more especially during the hot months of the year, must be claimed for the unwholesome milk which is supplied to the children of the poor, and it is this knowledge which is inducing some of our large towns to embark on the establishment and the maintenance of milk depôts, a name which at the present time is largely synonymous with the supply of sterilised or at least pasteurised milk. We are anxious, however, in this article to point out that the supply of sterilised or pasteurised milk is, or should be, but a very small portion of a municipal milk-supply, and it is that portion of it which could perhaps be most easily dispensed with. We are, indeed, very glad to see that Dr. G. F. MCCLEARY, whose milk depôt in Battersea is known to a large section of the medical profession as well as of the public, has lately drawn attention to this aspect of the question both in his work on "Infantile Mortality and Milk Depôts" and in an admirable paper which he read in February last before the Society of Medical Officers of Health. In that paper Dr. MCCLEARY expresses the opinion that "any methods having for their object the purification or quasi-purification in the city of milk already polluted in the country—such methods as sterilisation, pasteurisation, centrifugalisation, or filtration—must be regarded merely as makeshifts to be abandoned when better methods become practicable." This is in our view a thoroughly sound and statesmanlike position and it is one with which apparently Dr. GEORGE NEWMAN, the medical officer of health of Finsbury, who has lately taken part in the organisation of a depôt in Finsbury on the lines of some of the French depôts, entirely agrees.

It can, of course, hardly be seriously urged that nature has intended the young of one species to be nourished by the modified milk of another species and, assuming that the mother be healthy and able to suckle her young, she should be strongly urged, more particularly by her medical adviser, to do so rather than to shirk her responsibilities by procuring modified cows' milk at the municipal depôt, and the promoters of such depôts should use every legitimate means of bringing home to the mother her responsibilities to her child and to the State. In fact, this education of the mothers of newly born infants should be one of the most important functions of every sanitary authority and the milk of the depôt should only be employed, as a rule, as a *pis aller*. This is in no sense equivalent to an argument that such institutions are unnecessary; indeed, in our view there should be such an institution in connexion with every urban district, as also well-trained female inspectors to control the use, and to prevent the abuse, of the milk. But such a depôt should not only supply sterilised or pasteurised milk but also fresh, pure, whole milk drawn and kept under the most wholesome conditions. There are, too, obvious advantages in supplying such milk in sealed

bottles. The homes of the poor and the habits of the inmates are such as to render it almost impossible to protect the milk against home contamination and it is this contamination which has a decided influence in maintaining the high infantile mortality.

Some of the advantages of a municipal supply of milk may be gathered from the fifth paragraph of the Battersea contract, which specifies not only that the milk shall be of proper composition but that it shall be drawn from healthy cows and be free from chemical preservatives and colouring matter. The members of the medical profession in Battersea have, too, borne almost unanimous testimony to the value of this milk and their evidence is certainly of more value than much statistical matter. Great, however, as are the advantages of these municipal depôts, more particularly perhaps in an educational aspect, their influence as yet in relation to the total population is likely to be but small. In order that a general reform may be brought about it is necessary that there should take place an awakening of the public health conscience in the matter of better milk control. What is wanted is a record for the enlightenment of the public of the conditions which are actually found in he vast majority of the cowsheds in this country, where there are deficient light, defective ventilation, and bad drainage, and where neither the cows' udders nor the milker's hands are washed. The Liverpool and Manchester milk clauses which give these towns, under certain conditions, control over the cowsheds, and so on, outside the city from which milk is supplied to the inhabitants are admirable, but unless our rural districts will recognise their responsibilities the town dweller will continue for some time to come to imbibe unwholesome concoctions for milk. It is true that, as Dr. MCCLEARY points out, our county councils might take more action in the matter but, unfortunately, the past history of county councils in this direction does not hold out much hope that reform will come from this quarter. For ourselves we should be glad to see a survey undertaken by the medical department of the Local Government Board of some of the cowsheds in each county and a report made, accompanied by illustrations, of the conditions actually found to exist. In this way we might hope to see some awakening of the public health conscience in rural districts. In the meantime it is satisfactory to note that the Local Government Board for Scotland has recently issued some model regulations relating to dairies, cowsheds, and milkshops which in several particulars are in advance of those issued by the Local Government Board for England and Wales. In the past it is possible that too much attention, relatively, has been paid to the prevention of the spread of certain infectious diseases through the agency of milk, but having regard to the influence of impure milk upon infantile mortality a general attack upon darkness and filthy methods in the cowsheds of this country might be expected to yield an equally abundant harvest. The milk should be drawn from healthy cows in the open field where practicable, the udders of the cows and the hands of the milkers should be carefully washed prior to each milking, and the milk should be forthwith strained and cooled and sent to its destination in sealed cans in vans so constructed as to keep the milk at the lowest temperature practicable during the transit. If this were done the necessity for sterilisation at the depôts would be materially diminished and pasteurisation at the farm might entirely do away with such necessity. At present, however, sterilisation or pasteurisation is in many instances absolutely necessary for the satisfactory working of the depôts, more especially during hot weather, and the statistics furnished by Liverpool and other places, although obviously open to criticism, are such as to point to the conclusion that material benefit accrues in the homes of the poor from the employment of such milk.

The Pathology of Epilepsy.

MUCH has been written concerning the pathology and the etiology of epilepsy but these questions cannot be said yet to have passed the stage of surmise. The name of Dr. J. HUGHLINGS JACKSON has become indelibly associated with the phenomena of convulsions provoked by certain lesions in the motor area but in discussing the pathology of "epilepsy" that of the idiopathic form is usually understood and it is in this sense that we use the term here. Inheritance plays a prominent part in the etiology of this condition and the morbid state has been supposed to consist of some minute alteration in the chemical constitution of the grey matter of the brain. The recurrent "nerve storms" which constitute the disease have not, however, been adequately explained and no characteristic macroscopical or microscopical changes have yet been described.

In the *Journal of the American Medical Association* of April 29th Dr. B. ONUF reports the results of necropsies on the bodies of 16 patients who had suffered from epilepsy at the New York State Institution for Epileptics. In 12 cases there were valvular changes of the heart, most frequently of the mitral valve (80 per cent.). Lesions of the aortic valve were less frequent and alterations of the tricuspid valve were still more uncommon. Dr. ONUF considers these lesions as secondary results of the special strain induced by the major epileptic attacks. The cardiac conditions thus described are significant, for it is well known that a patient who is the subject of bradycardia may exhibit epileptiform attacks, and as bradycardia may result from changes in the myocardium it would be interesting to know whether any myocardial changes were noticed in the cases examined by Dr. ONUF. Capillary changes, tortuosity of the vessels, and aneurysmal dilations were observed in several cases and were also attributed to strain. In eight of the cases in which the lungs were examined acute pneumonia was found as a contributory cause of death. The cerebral changes are stated to have been very striking. In ten cases there was a marked thickening of the pia mater over the fronto-parietal lobe. In other cases there were vascular lesions—circumscribed atrophy of one frontal lobe, subdural hæmorrhage (one case), internal hydrocephalus (one case), cerebellar cyst (one case), and shrinkage of the convolutions of the vermis and adjoining cortex (three cases). The most marked changes, however, were noted in the thalamic region. These were of the nature of atrophy, sometimes the pulvinar, sometimes the other, portions being most notably affected. There was also an apparent discrepancy in the proportions of the geniculate bodies. Dr. ONUF

discusses the possible relations of these thalamic changes to the epilepsy but he does not venture to express an opinion as to whether they are directly connected with the attacks or are only part of a general pathological condition of the brain. He suggests that there was probably optic atrophy in some of these cases and therefore he lays stress on the importance of an examination of the fundus in patients suffering from epilepsy. Such marked changes as Dr. ONUF describes have not been recorded by observers in this country.

Sir WILLIAM GOWERS[1] has made some valuable comments on this subject which support Dr. ONUF in the reserve which he rightly maintains in the conclusions which are to be drawn from the results of his examinations. Sir WILLIAM GOWERS points out that the "instability" of the cerebral motor functions, instead of being solely due to alterations in the chemical constitution of the grey matter, may be the result of obvious disease. It is not indeed due to disease that can be seen in the damaged part, but beyond the visible disease, whatever its nature, is a zone of altered nerve tissue in which the slightness of the change permits activity in altered form. In such cases the morbid discharges constituting epilepsy may take place. Arising locally, they spread through the brain according to their energy and then leave a tendency to repetition which involves parts unaffected by the primary disease. The same writer proceeds to state that, although it is not customary (as we mentioned above) to include under the term "epilepsy" active progressive brain disease, such as a tumour, even though it cause epileptiform convulsions, yet there is a large class of cases of considerable interest in connexion with organic disease. In these instances there is an old spot of disease which induces the nervous discharges which may be slight or local at first but may spread when more intense and ultimately leave a general disposition which may hardly be distinguishable from idiopathic epilepsy. Some of Dr. ONUF's cases may perhaps be placed under this heading. His observations are well worthy of note but whether the records have added materially to the present pathology of epilepsy is open to doubt nor does he advance any claim of this nature. That so many and varied morbid conditions were found in the cases which he examined accentuates the difficulty that is experienced in arriving at any definite conclusion as to the precise pathology and morbid anatomy of epilepsy.

Some Considerations connected with the Relative Immunity of the Japanese Armies from Typhoid Fever.

AMONGST the many points that have served to rivet public attention on the stupendous war in the Far East none has done so more, perhaps, than the signal success which has attended the efforts of the Japanese in dealing with the so-called preventable diseases of armies in the field. It is notorious that in every great war of history disease has proved a most treacherous and dangerous foe and has given rise to far greater losses than have arisen from the wounds and casualties caused by the weapons of the belligerents. With the Japanese the case has, however, been different; they have succeeded in minimising the losses from disease and in obtaining results in this respect which have not been hitherto attained by other nations in war. All who have dealt with the medical history of this war have borne testimony to the admirable organisation of the Japanese and to the thoroughness with which every detail connected with their sanitary and medical arrangements has been thought out beforehand, as well as to the skill displayed in practically adapting these to the end in view. The striking statistical results which have been published have called attention to the success that has attended their efforts. These results as regards the greatly decreased scale of sickness and mortality which they set forth are in striking contrast with the experience of Europe and the United States of America in modern war. Are these results to be ascribed solely to the efficiency of the Japanese sanitary and medical systems or have there been any other factors or contributory causes at work in the case of the Japanese armies in Manchuria which have also to be taken into account?

In order to illustrate the point which we are more especially seeking to elucidate let us take the most important disease of modern war, typhoid fever. It is the scourge of European armies operating in the field, especially, perhaps, in the case of operations conducted in hot climates, and the United States in their recent war had the same experience. It has been said that typhoid fever has no geography: it is ubiquitous. The typhoid bacillus, about which and its life-history our knowledge has of late years become so much more extended and precise, is far more widely distributed in nature than is generally imagined. It is no longer to be maintained that this fever is an exclusively water-borne disease, although sudden and rapidly spreading epidemic outbreaks of it are, no doubt, more readily explicable in that than in any other way. But the investigations made after the Spanish-American war into the causes of that fever in the vast camps occupied by the United States troops, together with those of a German scientific commission of later date and the results of experimental observations in this country, have tended to enlarge our views about the existence of vehicles and sources of infection other than water, of a direct and indirect nature. In the case of the Japanese armies it is very important to note that, in addition to the great attention paid to sanitation, typhoid fever is treated as a contagious disease and the sufferers from it are carefully isolated. It is difficult to understand how in this way the dissemination of the bacillus can be prevented altogether, considering the length of time during which it may be detected in the urine, but possibly some of the immunity enjoyed by the Japanese has been due to these laudable precautions. Race, however, has probably played a part in this immunity. Without dwelling unduly upon the influence of race it has, nevertheless, to be recognised as a matter of ordinary observation and experience that Asiatics, native races and those indigenous to the soil, possess a relative immunity, real or acquired, from the diseases common to their own climate, as compared with European and other immigrant races foreign to it. It may

[1] Professor Allbutt's System of Medicine, vol. ii., p. 761.

be that such immunity in the case of typhoid fever, for example, is attributable to the fact that the natives have in infancy or early life paid their tribute to that disease or it may be that from the nature of their environing conditions they become possessed of an acquired tolerance rendering them immune. But may it not also be suggested that the relative immunity of Asiatics in general, and of the Japanese soldier in particular, from typhoid fever is not so much attributable to any racial as to physiological differences from the European owing to the nature of his food and his habits and customs?

The typhoid bacillus may find a most unfavourable soil for its growth and development in the graminivorous, rice-eating Japanese soldier, as compared with that to be found in the body of the flesh-feeding European, for example, whose diet so largely consists of meat and alcohol in some form or other. The bacterial intestinal flora may be very different in the two cases. An effort has been made in India of late to solve the problem as to the prevalence or not of typhoid fever among its native populations by means of the serum agglutination and sedimentation reaction test, with the result that typhoid fever is believed to be more common among the natives of India, and especially among native children, than has been supposed. Still, there cannot be any doubt that the prevalence and the mortality from this form of fever among the natives, as tested by ordinary Indian experience and corroborated by the records of the native army and jail population, are quite insignificant as compared with what obtains in the European army serving in that country; to which it may be added that the cases of typhoid fever which do occur in the native army are mainly among the Gurkha troops who are meat-eaters and spirit-drinkers. Moreover, from what is known of the well-nigh universal habits of the native population in regard to fæcal contamination of the soil the amount of typhoid fever among them should be proportionately large if their excreta were sowing the soil with its bacillus. There are no sewers in the plains of India and, speaking generally, next to none in the East or in subtropical climates, consequently the inhabitants are compelled to have recourse to the soil for the disposal of their excreta. In the case of the native jails in India this has long been done without having been found to cause outbreaks of typhoid fever in the jail population. The adoption of a dry-earth system, on the other hand, may be, and probably is, a dangerous method for the disposal of fæces in the case of communities so liable to typhoid fever as European soldiers have always shown themselves to be when living under the conditions of field service—presumably because of the risk of introduction of the bacillus to susceptible hosts. Assuming, as we must do in our present state of knowledge, that the typhoid bacillus is veritably and indeed the cause of that disease, the problem may be summarised in the following questions: To what is the relative immunity of Eastern peoples from typhoid fever due, and has such an immunity played any part in the case of the Japanese armies operating in Manchuria? If this latter question be answered in the affirmative, it may be suggested as a subject for further inquiry whether this relative immunity from, or insusceptibility to, typhoid fever on their part, as compared with our experience in the case of European armies generally, is attributable in any way to their environing conditions, and especially to their system of dietary. These questions cannot be answered definitely without exhaustive and statistical examination of the available evidence, but we may be permitted to surmise that the diet of the Japanese, no less than their admirable tactics of precaution, has saved them from the scourge of typhoid fever.

Annotations.

"Ne quid nimis."

THE INFLUENCE OF TRADITION ON MEDICAL PRACTICE.

AT a meeting of the Manchester Medico-Ethical Association held on April 18th Dr. S. Holgate Owen opened a discussion on the Influence of Tradition on Medical Practice. He pointed out that it was extremely difficult to judge correctly of tendencies in any social or scientific organisation when viewed within a short space of time but that, as regards the organised practice of medicine, the trend of method had, during the past 30 years, undergone a change which was almost revolutionary. The wider the range of survey the more it was found that fixed principles, established rules, and uniform systems, or what used to be called "orthodoxy," were becoming uncertain as guides and less influential upon the minds and the action of medical men. In the midst of this apparent instability, and, as if to taunt us with our want of light and guidance, there came to us from many parts of the world, but especially from America, drugs of all descriptions suitable for all complaints and said to be absolutely certain in their curative effects. This absence of systemisation might be observed in all countries. France, Germany, and America seemed to be devoid of any authoritative teaching in the medical art; there was no medical school or society anywhere which at the present time could agree to promulgate any system or mode of treatment which could be influential beyond its immediate surroundings or for any length of time. Scholasticism, indeed, had received its death-blow, but only within a century ago. Although medicine had now asserted for itself a position among the sciences, it must be remembered that traditional influence had held universal sway for nearly 2000 years—namely, from the time of Hippocrates to the beginning of the seventeenth century, the period of William Harvey and Thomas Sydenham, when scientific discovery began to lay the ghosts of superstition and dogma. The spirit of dogma, however, survived to the beginning of the nineteenth century. At the present juncture social and scientific developments were taking place which were influencing the practice and, Dr. Owen believed, the status of the medical man. The rapid advance which public sanitation, domestic sanitation, and personal hygiene were making, on scientific lines, was forcing its way at the urgent demand of a social development unprecedented in rapidity and intellectual breadth at any previous period of our history. The problem which now faced us every day was less frequently, What are we to give to cure a disease, and more commonly, How are we to correct the error of life through which it has arisen and to prevent its occurrence?

HOSPITALS AND THE WELL-TO-DO.

IN a recent case heard by Mr. Justice Darling and a common jury Mr. Bale, a tailor, sued the London County Council for damages for personal injuries and for damage to a trap received through a collision with a tram-car in the Camberwell-road. Mr. Bale was awarded £314

and Mr. Justice Darling, in alluding to the particulars of special damage, said that he noticed that the plaintiff had been treated at St. Thomas's Hospital. He did not, however, see that any payment had been made to that institution. Mr. Bale was a well-to-do man and could afford to pay something. Hospitals were intended in the first place for persons in need. The plaintiff's counsel promised that his lordship's suggestion should receive attention. We do not object to Mr. Bale having been treated at the hospital, for his injuries may have been of such a nature that it was wiser not to convey him home, but we cordially agree with Mr. Justice Darling's remarks. Seeing that Mr. Bale's solatium will come out of the pockets of every ratepayer in London we think that he should hand over a very substantial proportion of it to the hospital, an institution which by its charity relieves the rates of heavy expenses which, were it not for the hospital, would have to be met by the ratepayers.

SIR ERNEST CASSEL'S GIFT FOR THE RELIEF OF OPHTHALMIA IN EGYPT.

IN the year 1902 Sir Ernest Cassel gave a sum of £40,000 the income of which was to be devoted to the treatment of sufferers in Egypt from diseases of the eye. It was decided by the authorities that the best way to carry out Sir E. Cassel's idea was to start a travelling ophthalmic hospital and this was accordingly done, the surgeon in charge being Mr. F. A. MacCallan. In common with other members of the medical profession we expressed it as our opinion that this scheme would not be successful and that the money would be more or less wasted. We were, however, apparently in error in this opinion, for Lord Cromer in his report on Egypt for the year 1904 says: "The experiment has proved a complete success. The generous donor of this money has every reason to be gratified with the very large amount of suffering which, in consequence of his liberality, has been relieved." The scheme has, however, been carried out upon a much larger scale than we were at first led to believe that it would be and the travelling tent has developed, according to Mr. MacCallan's report, into a large operating tent floored with concrete, two out-patient waiting tents, two in-patient tents, tents for the staff, and a kitchen. This equipment is, of course, much more like a small field hospital and we can well believe that it has done good service. Trachoma with its sequel trichiasis is the disease which has been most frequently treated and in all 3379 patients have been treated, while the number of operations performed has been 1268. Lord Cromer expresses a hope that before long the system will be extended, and judging by the report of the medical officer we think that this hope is quite justified.

THE PHYSIOLOGICAL ACTION OF VALERIAN JUICE.

M. Chevalier and M. Prichet, in a communication brought before the Société de Thérapeutique, and published in the Répertoire de Pharmacie for February, call attention to the physiological action of valerian juice prepared by expression of the fresh root out of contact with air, and of such a strength that one part of the juice represents one part of the root. They find that the juice diminishes the blood pressure and slows the pulse after a transient acceleration without increasing the work of the heart. This action is constant and serves to distinguish the fresh juice from preparations of valerian which are made from the dried root, as well as from the various valerianates used in medicine which have a slightly stimulating action on the central nervous system. This is due to a change in the physiological properties of the active constituents of valerian owing to oxidation during the process of drying. The sedative and antispasmodic action of the fresh juice of valerian root is very constant and is not accompanied by any permanent stimulating action. The results obtained by the writers occasion no surprise, as it is a well-known fact that the active principles of the plant undergo a chemical change which commences at the moment of collection. Collectors of herbs are familiar with the fact that a freshly gathered valerian plant has scarcely any odour, but by the time the collector reaches his destination the characteristic odour of the plant will have become well marked. Cats, as everybody knows, are particularly fond of valerian root and the more the root is bruised the more they are attracted by it. The chemical change is attributed to bornyl isovalerianate, a constituent of the fresh root, which during the process of drying gradually decomposes, producing free isovalerianic acid. Valerian root contains about 1 per cent. of a volatile oil, one of the constituents of which is the substance bornyl isovalerianate. In describing the physiological action of the volatile oil Sir Lauder Brunton[1] states that "the oil in large doses paralyses both the brain and spinal cord, lowers the blood pressure, and slows the pulse. It is employed as an antispasmodic and stimulant in cases of hysteria. ..... Valerianate of zinc has been supposed to combine the nervine tonic action of zinc with the antispasmodic action of valerian, but it is much better to use valerian itself or its oil along with a salt of zinc as the acid has no important physiological action." Since the fresh juice owes its peculiar physiological properties to the undecomposed bornyl isovalerianate contained in the volatile oil, it would appear to be more desirable to use the volatile oil in preference to the fresh juice and other preparations of valerian. The volatile oil can be distilled in quantity, so that a plentiful supply could always be obtainable, but some difficulty would be found in procuring at all times a supply of the fresh juice.

THE NEW SYDENHAM SOCIETY.

THE council of the New Sydenham Society announces some important additions to the attractions offered to its members. In future all members, new as well as old, will, on payment of the year's subscription, be entitled to choose one volume from the surplus stock. This will be without further payment and will be wholly additional to works issued for the year. Part of the society's library has for long been out of print. There remains in hand, however, to be selected from a long series of works, many of them of great permanent value. Amongst these may be mentioned: Laveran on "Paludism and its Organism"; Pierre Marie on "Diseases of the Spinal Cord"; Bernutz and Goupil on "Diseases of Women"; Trousseau's "Clinical Medicine," Vols. III. and IV.; Niemeyer's "Lectures on Pulmonary Consumption"; Charcot's Lectures, several volumes; Billroth's "Surgical Pathology," two volumes; Guttmann's "Manual of Practical Diagnosis"; Koch on "Wound Infection"; Hirsch on "Geographical and Historical Pathology," three volumes; Graves's "Clinical Medicine," two volumes; Henoch's "Diseases of Children," two volumes; Ewald's "Disorders of Digestion," two volumes; Pozzi's "Gynecology," three volumes; Helferich on "Fractures and Dislocations"; several volumes of selected Clinical Lectures, Spiegelberg's Midwifery, two volumes, Naunyn's Cholelithiasis, and so on. In the case of a subscriber wishing for a work of more than one volume the payment of one or more subscriptions in advance will enable him to secure all at once. The council proposes to keep back a certain small number of all the volumes for future needs and the advantages now offered will, of course, cease in the case of each work when that minimum is reached. The number

[1] Pharmacology, Therapeutics, and Materia Medica, 3rd edition, p. 962.

at present in hand varies greatly in different works and as regards some of the most valued may soon be exhausted. Under another regulation the council now allows members to select any seven of the society's volumes for a single guinea. In order to meet the increasing demands of the office and to secure more punctuality in the discharge of its duties the council has appointed Dr. Alfred E. Russell of 9, Wimpole-street, London, W., as acting general secretary, to whom in future all letters of inquiry should be addressed. Mr. Jonathan Hutchinson will for a time retain the position of honorary general secretary. The preparation of the Clinical Atlas remains in the hands of a large representative committee and the society's agency is, as heretofore, at Messrs. Lewis's, 136, Gower-street, London, W.

ALIEN AND IMMIGRANT LONDON IN 1781.

PRIOR to the year 1801 no census of the population of London had been taken but instructive conjectures as to the causes of death and the "chance of life" had been made since Graunt's "Observations on the Bills of Mortality," 1696. In 1781 Dr. Robert Bland drew some conclusions of this kind, as well as others, from the "Midwifery Reports of the Westminster General Dispensary" which are of no small interest to-day. The women admitted to the dispensary were asked to register their birthplaces and those of their husbands and from these facts, meagre enough in themselves, Dr. Bland constructed a comparative table of the population of London, in which it is set forth that of 3236 married persons accounted for at the Westminster General Dispensary only 824, or one-fourth, were native Londoners. Of the remainder four-sevenths, or 1870, were immigrants from the different counties of England and Wales; 209, or 1 in 15, came from Scotland; and 280, or 1 in 11, from Ireland. 53, or 1 in 60, were what we now call "aliens." Of 824 married persons born in London there were one-fifth more women than men. "This may be accounted for either by supposing a greater number of males to die or to migrate before they attain a marriageable age than women. It is also to be observed that of the Scotch and of the foreigners the women are in proportion to the men as about 1 to 33 but of the Irish they are as 3 to 7." If these statistics are to be trusted they throw light not only on the present alien question but on that of the origin of the Cockney proper. If three-quarters of the ancestry of native Londoners were immigrants, the theory recently advanced that Londoners cannot count three generations of Cockney ancestors is greatly strengthened. It should be borne in mind that the population of London was in 1781 far below 1,000,000. Putting it at about 750,000 and supposing that Dr. Bland's estimate of 1 foreigner in 60 be correct we may suppose that the total number of aliens proper residing in London in 1781 amounted to about 12,500.

INSTRUCTIONS TO MIDWIVES.

THE Manchester midwives supervising committee has issued a booklet of instructions to the midwives practising in the district under its supervision in which it reminds them of the obligations which rest upon them and which they are required to fulfil on pain of being reported to the Central Midwives Board and perhaps of being removed from the roll. As the committee points out, the Act is now in full force and after April 1st last no woman must use the title of midwife or its equivalent unless she is certified, nor may a woman certified under the Act employ any uncertified woman as her substitute. Instructions are given to the midwives as to the cleanliness of their persons and their homes. In order to insure the good sanitary condition of the latter arrangements have been made by which the midwife can have her house inspected by the sanitary authority if necessary. The committee recommends that the midwife's bag should have a removeable washable lining; for the purpose of vaginal douching it advises the use of lysol or kresol and for the disinfection of the hands a solution of perchloride of mercury of the strength of 1 in 1000. No doubt the question of expense prevented the committee recommending soluble biniodide of mercury for the latter purpose, as otherwise it is a much better disinfectant than perchloride of mercury with the great advantage of not spoiling instruments. The midwife is carefully instructed how to keep her appliances clean and also the bag itself, a most important precaution, and one which, we fear, is often neglected. In the preparation of her hands great stress is laid on the importance of a proper scrubbing with soap and water and a nail brush and then washing the hands in a solution of perchloride of mercury of the strength of 1 in 1000 for at least two minutes. We are glad to see that the committee recommends that a pad of wool wrung out of the same solution should be applied to the vulva after the delivery of the placenta. Further instructions are given with regard to the care of the mother during the lying-in period and of the newly born child. Rules are also laid down to guide the conduct of the midwife with regard to the notification of the birth of stillborn children, the death of a mother or child before the arrival of medical assistance, and the calling in of medical assistance. Finally, there are very clear instructions as to the precautions to be taken by the midwife when she has had the misfortune to be in attendance on a case of puerperal infection. This little book should prove of great service to the women for whom it is intended and we hope that other supervising committees will follow the excellent example of the Manchester committee in issuing similar rules.

PERITONITIS IN TYPHOID FEVER WITHOUT PERFORATION.

IT is well known that peritonitis in typhoid fever may result from other causes than perforation of the intestine, such as ulceration of the gall-bladder or rupture of a suppurating mesenteric gland or of a splenic abscess or without any local cause. Dr. J. Dreschfeld states in Allbutt's "System of Medicine" that peritonitis may be due to extension of inflammation to the serous coat of the intestine and that it then generally is circumscribed and tends to form adhesions but occasionally gives rise to local suppuration. At the meeting of the Société Médicale des Hôpitaux of Paris on March 17th M. Courtois-Suffit and M. Beaufumé contributed an important paper and reported the following case of peritonitis without any definite local cause. It is noteworthy because the peritonitis was not circumscribed but general. A youth, aged 18 years, was admitted into hospital on Feb. 3rd, 1905, the eleventh day of an attack of typhoid fever. The temperature was 104·3° F. All the usual symptoms were present and the Widal reaction was obtained. He was treated by cold baths (at 61° F.) which were given every three hours. The temperature remained about 104°. On the twenty-first day the pulse was 114, no pain was complained of, and the baths were given as usual. Suddenly at 11.30 P.M. the patient complained of violent pain in the upper part of the left iliac fossa. After about ten minutes the pain radiated over the whole abdomen; after half an hour a liquid stool was passed and after another quarter of an hour another stool. There was no tympanites, the pulse was 110 and feeble, the face which previously had been congested became very pale, and the respiration became noisy and panting. Ice was applied to the abdomen and the pain and oppression rapidly disappeared. At 1 A.M. the temperature was 103·7°. At 1.30 A.M. he hiccoughed and vomited greenish-yellow fluid. At three the temperature was 104·9° and there was no pain. The patient slept until 5.30. At six the temperature was 106·1°. At eight one of the writers arrived at the hospital.

He was struck with the pallor of the patient's face; the features were drawn, the eyes were surrounded with dark circles, the nose was cold, the tongue was dry, the pulse was 114 and feeble, the abdomen was scarcely sensitive and was not tympanitic, there was no dulness in the flanks or hypogastrium, and the liver dulness was preserved. In spite of the absence of tympanites intestinal perforation was diagnosed and laparotomy was performed at once. On opening the abdomen no gas escaped but about one and a half litres of brownish-yellow odourless fluid containing whitish particles. The intestinal coils were not distended but very congested and agglutinated by yellowish-white friable membranes, especially on the right side. The small and large intestines were examined throughout their whole length and showed no sign of perforation; the appendix was quite normal. The mesentery contained numerous large glands but none of them were ulcerated. The wound was closed and drainage was provided. After the operation the patient was somnolent. About 3 P.M. he called for the bed-pan. He passed about a pint of red fluid, became collapsed, and died. At the necropsy about a pint of yellowish-brown fluid was found in the pelvis. The lower third of the ileum and the ascending colon were much congested. The intestines were covered with yellowish-white lymph which was abundant for a distance of six feet above the ileo-cæcal valve and on the cæcum and ascending colon. Water was injected into the intestines but no perforation was disclosed. A large quantity of blood escaped from the open end, indicating an intestinal hæmorrhage which seemed to have come from a large ulcerated Peyer's patch. There were numerous typhoid ulcers in the ileum, cæcum, and ascending colon. The appendix was perfectly sound. No lesion to account for the peritonitis was found in any viscus. Dieulafoy[1] explains such cases of peritonitis as due to typhoid infection independent of intestinal infection, the peritoneum being infected in the same manner as the pleura or the bones. M. Courtois-Suffit and M. Beaufumé think that it is more logical to suppose that the peritonitis is due to infection by contiguity from the intestines. This mode of infection is indicated in their case by the predominance of membrane at the end of the ileum and the beginning of the colon where the typhoid lesions were greatest. The symptomatology of the peritonitis is in several ways remarkable. The onset by sudden and violent pain exactly resembles that of perforative peritonitis but the lesions found on operating at the end of ten hours show that the peritonitis must have existed for a much longer period. Therefore it must have remained completely latent for a long time. It is also noteworthy that the symptoms of perforative peritonitis—diffuse abdominal pain, vomiting, hiccough, and so on—were present with one important exception: there was no tympanites and the liver dulness was preserved. The absence of perforation readily explains these facts.

[1] Manuel de Pathologie Interne, tome iv., p. 130.

PLAGUE AND RATS.

OUTBREAKS of bubonic plague have occurred at intervals in Sydney during the last few years but without ever attaining very extensive proportions. At an early period in the history of these invasions—namely, in the year 1900, Dr. J. Ashburton Thompson, president of the Board of Health of New South Wales, expressed the opinion that epidemic plague in the human subject was due wholly to plague-infected rats and on the successive appearances of the disease in the colony the work of his department in checking it has been directed mainly to the destruction of rats. The second outbreak of plague in Sydney came to an end in June, 1901, the last patient being attacked about the 12th of that month and the last plague-infected rat was caught on July 14th. The rat-catchers still continued at work and from July 14th, 1902, to April 30th, 1903, there were caught 31,075 rats and mice, of which 17,160 were examined in the laboratory but were found free from plague. Sydney had therefore for eight months and a half been free from plague either in rodents or man. On May 12th, 1903, a plague-infected rat was found. During the period from May 1st to August 15th 8695 rats and 5976 mice were examined in the laboratory and of this number 111 rats and 50 mice were ascertained to be infected with plague. The last plague rodent was brought in on August 15th. In the course of this same period two cases (both terminating in recovery) occurred in the human subject, one being notified on June 20th and the other on July 4th. In commenting on these facts Dr. Thompson directs attention to the extremely small proportion borne by the plague-infected rodents to the total number caught and he explains this partly on the ground that, as a rule, those which are taken in traps are in good health and actively searching for food, or, if infected, have not reached a stage of illness at which pathological signs have appeared. Further evidence tending to show the causal connexion between plague in rats and man is given in the *Australasian Medical Gazette* of Feb. 20th, the article in question being an account of the first outbreak of plague in New South Wales outside Sydney. Between Dec. 14th, 1904, and Jan. 1st, 1905, six persons were attacked with sudden illness at four farms within moderate distances of Ulmarra, a village on the Clarence river. Communication between the Clarence river district and other parts of the State is chiefly by sea and a regular trade is carried on by sea with Brisbane, in Queensland. Four of these six patients died and the diagnosis of plague was made about Jan. 2nd. A number of plague-infected rats were caught in Ulmarra and the neighbourhood between Jan. 8th and the end of the month. Six more patients were attacked between Jan. 7th and 27th. At one house, which yielded two cases, plague-infected rats were identified immediately before the patients fell ill.

NEW LYING-IN HOSPITAL AT WOOLWICH AND THE HIGHER TRAINING OF MIDWIVES.

AT Woolwich on May 11th Princess Christian opened a "Home for Mothers and Babies and Training School for District Midwives," which has been established by the efforts of Miss Alice Gregory, a daughter of the Dean of St. Paul's, and herself a trained and certified midwife, assisted by a committee of which Mr. F. S. Hawkes is honorary secretary. The home contains 12 beds and its staff is to consist of three certified midwives who have passed the examination of the Obstetrical Society of London and have had a training also in general nursing. The local medical practitioners will attend when summoned and there is a consulting staff (consisting of Dr. A. L. Galabin, Miss Annie McCall, M.D. Bern, and Mr. G. Bellingham Smith) whose services will be available if any exceptional difficulty should arise. The opening ceremony consisted of a short service of prayer, conducted by the vicar of the parish, the Rev. W. H. Carey, concluding with a benediction by the Dean of St. Paul's. Princess Christian then declared the home open and wished it every success. In proposing a vote of thanks to Her Royal Highness Dr. C. J. Cullingworth said that in addition to the benefits which this hospital would confer upon the densely populated district of Woolwich Miss Gregory and those associated with her had decided to give it a character of its own as a training school for midwives. The weak points of the ordinary training of a midwife in this country were: (1) its short duration; (2) its non-insistence upon a previous

hospital training in general nursing; and (3) the absence of any organisation for keeping the pupils in touch with their school after they have left it. It was intended in the scheme that day inaugurated to obviate all these defects. It was also an essential part of the scheme that every pupil who entered for training should undertake to devote herself to district midwifery—i.e., to work amongst the poorer classes of the community, the classes whom the Midwives Act was intended to benefit. This was to be the distinguishing feature of that school. On the other hand, the majority of the pupils at the existing training schools did not contemplate devoting themselves to district work, their main object being to qualify themselves as high-class monthly nurses. Until the hospital was in a position to offer a free training a fee of £20 would be charged for a course of from six to twelve months and it was hoped that "scholarships" to this amount would be instituted by various county councils.

ANEURYSM OF THE AORTA SIMULATING POTT'S DISEASE.

WHEN aortic aneurysm causes erosion of the vertebræ death usually occurs before the process has progressed sufficiently to cause spinal symptoms or spinal deformity. If an aneurysm is so situated as to develop without producing characteristic symptoms and lays bare the spinal membranes, producing compression myelitis, Pott's disease or a tumour may easily be diagnosed. In the University of Pennsylvania Medical Bulletin Dr. C. W. Burr has reported the following remarkable case in which this error occurred. A man, aged 56 years, was admitted into hospital on Oct. 15th, 1902. He stated that many years before he had syphilis and also malarial fever. His present illness began with dull rheumatic pains in the back four years before admission. After a time the left leg and then the right became numb. Later the legs became stiff but he was able to walk until two days before admission. Two weeks before admission incontinence of urine began. He lay in bed with the legs rigidly flexed on the thighs and the thighs on the abdomen. The knee-jerks were much increased and ankle clonus was present on both sides. There was only partial control of the bladder and the rectum. At the eighth dorsal vertebra slight angular curvature was observed and pressure on the spine was painful. The patient complained of pain under the right scapula. The right leg was anæsthetic; the left was sensitive to deep pressure but not to touch. Below the iliac crests there was complete tactile anæsthesia. The urine was alkaline and contained a little pus and a trace of albumin. The temperature ranged from 98° to 100° F. Examination of the chest was negative. A tuberculin injection gave a distinct reaction. The diagnosis of Pott's disease seemed clear. Bed-sores formed on the buttocks and death took place on March 23rd, 1903. At the necropsy marked bulging of the thorax posteriorly on the left side was observed. A large aneurysm extended from the descending portion of the arch of the aorta to the tenth dorsal vertebra. The bodies of the dorsal vertebræ from the fourth to the tenth inclusive were completely eroded and the spinal canal was exposed. The spinal dura mater was adherent to the posterior wall of the aneurysm for this distance. The left pleural cavity was filled with blood which had come from a rupture of the aneurysm. No signs of tuberculosis were found. Microscopic examination showed proliferating internal and external pachymeningitis of the dorsal cord and ascending and descending degeneration. Dr. Burr was led into error by the slight pain, the marked kyphosis, the tuberculin reaction, and the fact that the symptoms were entirely spinal. If he had continued to examine the patient's back at intervals he could have finally made a correct diagnosis because such bulging of the ribs as was found at the necropsy never occurs in Pott's disease. But this bulging must have developed only a short time before death because Dr. Burr ceased to examine the patient only when he was sure that propping him up in bed for the purpose would be injurious. Dr. Burr also thinks that he ought to have given more thought to the long period which elapsed before nerve symptoms occurred, as such is very rare in Pott's disease.

THE QUEEN'S JUBILEE HOSPITAL.

IN THE LANCET of April 22nd we referred to the position at the above-mentioned hospital and gave the salient points of the report of the Commissioners appointed by King Edward's Hospital Fund. This report practically recommended that a clean sweep should be made of the present staff and board of the hospital with the exception of the treasurer and the trustees and suggested that the hospital should be transformed into a casualty and out-patient institution. The board has issued a reply suggesting a modification of the Commissioners' recommendations on the following lines:—

(1) That the hospital continue to exist as a general hospital for in- and out-patients; (2) that the constitution and by-laws be suspended for a period of 12 months; (3) that the present honorary medical staff be retained; (4) that the present board of management resign; (5) that a temporary board of management be formed to serve for one year and then to report to the governors; (6) that one-half of the lay members of the new temporary board be elected by the governors and the other half by the executive of the King's Fund; (7) that the chairman be nominated by the executive of the King's Fund; (8) that the medical staff in addition elect representatives from their own body to serve on the board, to assist and advise on matters relating to the medical department; (9) that a competent male secretary be appointed forthwith.

These modifications, it will be seen, differ mainly from those of the King Edward's Fund Commissioners in the retention of the medical staff and of the hospital as a hospital, and an agreement may be arrived at which will eventually lead to a permanent peace. In our opinion the hospital is not required as a hospital and we cordially agree with the Commissioners, who think that it should be reconstituted "as a casualty and out-patient department with a few beds attached."

THE ACTION OF A NEW COLLOIDAL FERRIC HYDRATE (DIALYSED IRON) ON ALBUMIN.

M. J. Tribot and M. H. Chrétien have brought to the notice of the Académie des Sciences[1] a new form of dialysed iron which they find possesses in a greater degree the power of transforming albumin into albumose than does the ordinary dialysed iron. The latter was discovered by Graham and has been used extensively in medicine but owing to the method of preparation it contains a notable proportion of ferric chloride in addition to the colloidal ferric hydrate. M. Tribot and M. Chrétien successfully tried to obtain a solution of dialysed iron containing less ferric chloride by passing an electric current of about one ampère through the ferric solution during the process of dialysis. The solution of dialysed iron so obtained possesses all the properties of Graham's solution and experiments carried out to compare the action of the two liquids on albumin demonstrated the advantage of the electro-dialytic solution over Graham's solution. The solutions were made alkaline with potassium hydrate and added to a known weight of albumin; the yield of albumose was observed after heating during four hours at from 40° to 42° C. The electro-dialytically prepared solution converted 27·02 per cent. of the albumin into albumose, while Graham's solution only converted 8·16 per cent. of the albumin. When the iron solutions were acidified with hydrochloric acid slightly lower figures were obtained. In all cases no peptones were formed. M. Tribot and M. Chrétien are continuing their researches but from the results which they have so far obtained it would appear that already an improvement

[1] Comptes Rendus, Jan. 16th, 1905.

has been made in this important preparation of iron. It is well known that metals are absorbed from the intestinal canal in the form of albuminates and the ferric salts have an irritant action in the stomach. A solution of ferric hydrate practically free from chloride might, therefore, be expected to be absorbed with greater ease than is the case with the ordinary dialysed iron. Further results, especially those of a clinical nature, will be awaited with interest.

THE MEDICAL SCHOOL OF WESTMINSTER HOSPITAL.

IN obedience to the view that the concentration of the teaching of the preliminary and intermediate subjects of the medical curriculum in London at a few centres will result in greater efficiency in teaching as well as economy in expenditure, the Westminster Hospital Medical School has completed negotiations with King's College by which arrangements have been made for the teaching of physics, chemistry, anatomy, physiology, and materia medica (that is to say, the subjects of the preliminary and intermediate examinations) to Westminster Hospital students at King's College. Students will enter Westminster Hospital Medical School, as in the past, and will remain Westminster Hospital men and will not become matriculated students of King's College, but they will be taught the earlier subjects of study at that institution. The scheme will come into effect at the commencement of the next winter session in October. At the same time the Westminster Hospital Medical School is thoroughly re-organising the teaching of the subjects of the final examination. Those responsible for this important move believe that their action marks the commencement of a more general concentration of the teaching of the preliminary and intermediate subjects of the curriculum and that such concentration will promote the best interests of medical education in London. Different aspects of the question are discussed this week in our columns by Mr. Henry Morris, whose oration at the Medical Society deals with the subject, and by ourselves in a leading article.

THE ANNUAL DINNER OF THE PHARMACEUTICAL SOCIETY.

THE members of the Pharmaceutical Society and their friends must have been encouraged and gratified at the annual dinner held in the Whitehall Rooms of the Hôtel Métropole, London, on May 16th by the vigorous speeches which were delivered in support of the amended Pharmacy Bill now before Parliament. The position created by the judgment of the House of Lords to the effect that the word "person" in the 15th Section of the Pharmacy Act could not apply to "a company of persons" is undoubtedly serious for the pharmacist and is a menace alike to the dignity of the pharmaceutical calling and to the health of the public. It seems illogical to lay down that the 15th Section of the Act cannot apply to a limited liability company because they are not persons who can be examined for the purpose of qualification and are not individuals. Such an interpretation defeats the intention of the Act, for surely those who were responsible for the drafting of the Bill intended to apply its restrictive clauses to anyone who desired to act as a pharmacist—i.e., to a company of persons as well as to a single person. If such was not the intention then the sooner the Pharmacy Act is amended the better for all concerned. Company-mongering is an undesirable and a dangerous association with the profession of pharmacy. It has been said that pharmacists have themselves to thank owing to the heavy charges made by them in the past for medicines and the making up of prescriptions. If they had been content to make moderate and reasonable charges there would have been, it is urged, no field for company pharmacy and no opportunity for the mere company promoter. Whether that be the case or not this kind of argument forms in the mind of the limited liability company a justification for its existence, and in one instance it was announced in an advertisement in the *Times* that after independent investigation that newspaper had declared that the money saved by the public who dealt with drug stores amounted to no less than a million sterling per annum. In proposing the toast of "The Houses of Parliament," the President of the Pharmaceutical Society, Alderman R. B. Robinson, J.P., L.C.C., said that he had had a communication from the editor of the *Times*, in which the latter stated that the *Times* had made no independent investigation of the kind suggested and no estimate of the amount saved by the public, but the statement appeared in an advertisement the accuracy of which was in no way guaranteed by the *Times*. The chief topic of the evening was thus, as might have been anticipated, the amended Pharmacy Bill and amongst those who spoke in favour of the reform suggested were Mr. T. Lough, M.P., Mr. Henniker-Heaton, M.P., Sir R. Douglas Powell, and Mr. David Howard. The last-named gentleman paid a well-deserved tribute to the excellent work done by the Pharmaceutical Society and the President, in replying to the toast of the society, stated that its membership was steadily increasing and that the benevolent fund had afforded aid to the extent of £3000 to its less fortunate members. In response to the toast "The Medical Profession," Sir R. Douglas Powell referred to the importance of the making up of medicine being consigned only to a skilled person. The President, in proposing the toast, touched upon the excellent relations subsisting between the medical profession and pharmacists and mentioned that owing to the representation of medical men they had obtained an extension of the poisons schedule so as to include substances such as sulphonal.

GASTRITIS WITH EROSIONS, OR "EROSIVE GASTRITIS."

IN the Proceedings of the Pathological Society of Philadelphia for January last Dr. John Funke records his investigation of a case of parenchymatous nephritis in which extensive erosions of the stomach were found at the post-mortem examination. His paper includes a summary of the chief views on the origin and the nature of gastric erosions. The condition found in the stomach consisted in a number of small depressed areas along the lesser curvature towards the cardia, around the pylorus, and on the greater curvature near the pylorus. These areas were round, oval, or irregular in outline, varied from a millimetre to a centimetre in diameter and from one to two and a half millimetres in depth, their edges were bevelled, and the floor was usually pale and smooth. As a rule they were discrete but in a few cases two had coalesced. They were more abundantly found between the folds of the mucous membrane than upon them. On histological examination the erosions were found in some cases to involve about half the thickness of the mucosa, while in a few they extended nearly to the muscularis mucosæ. Over most of the erosions there was a layer of necrotic tissue containing many lymphoid cells, while in one case a partially separated slough was found. The gland tubules in the floor of the erosions contained degenerated cells, while the lining epithelium frequently showed mitotic figures; the retiform tissue between the tubules was infiltrated with mononuclear and a few polymorphonuclear leucocytes, while the vessels were engorged. These changes Dr. Funke regards as indicating inflammation and he calls the condition "erosive gastritis," although it would be more conveniently and more correctly termed gastritis with

erosions. No bacteria were found either in the erosions or in the mucous membrane around, although search was made for them by Gram's method, by polychrome methylene blue, and by ordinary methylene blue. These observations agree almost entirely with the older observations of Rokitansky, Hemmeter, and Dieulafoy. Erosions of the stomach have been the subject of some degree of controversy since Rokitansky in 1861 expressed the opinion that such erosions might form the starting point of a gastric ulcer. This view was ably controverted by Langerhans who pointed out that gastric erosions and gastric ulcers have little in common in origin, in site, and in shape. With regard to the conditions leading to erosion widely different causes are given by different pathologists; among them may be mentioned chronic gastric catarrh, strong contraction of the gastric musculature after burns and injuries, and diseases of the central nervous system. The exact mechanism of their production is also very variously described. Nauwerck concludes that hæmorrhagic erosions are due to digestion by the gastric juice of the superficial parts above a hæmorrhagic infiltration of the mucous membrane. Hemmeter thinks that the primary necrosis leading to the erosion is caused by bacteria and that after this necrosis the necrotic area is digested. Dieulafoy regards these erosions as due to rapid and limited necrosis of a small part of the mucosa with little or no inflammatory reaction, while Dr. Funke himself regards the condition as analogous to ulcerative stomatitis and some forms of ulcerative colitis. He further suggests that in some cases it may be due to the excretion into the stomach of some poisonous material in the blood and adduces evidence of excretion into the stomach analogous to the excretion into the colon of metallic and other poisons.

CONVERSAZIONE OF THE MEDICAL SOCIETY OF LONDON.

THE annual conversazione of the Medical Society of London was held in the society's rooms in Chandos-street, Cavendish-square, W., on May 15th, when immediately after the reception the Fothergillian medal, awarded under the new regulations only every third year, was presented to Sir Frederick Treves in recognition of his eminent services in the department of abdominal surgery. The President, Mr. John Langton, in a felicitous speech, made the presentation and alluded to the many and well-deserved honours which Sir Frederick Treves had received from high sources and he, in acknowledging the award, said that he was profoundly obliged for this distinguished honour. Of all the episodes in his career there was none he would look back on with greater pleasure than receiving that much-cherished medal. The annual oration was then delivered by Mr. Henry Morris on the Financial Relations between the London Hospitals and their affiliated Medical Schools and the Bearing of these Relations on Medical Education, which is published at p. 1313 of the present issue of THE LANCET. A vote of thanks to the orator, proposed by Sir Lauder Brunton and seconded by Mr. D. H. Goodsall, was enthusiastically accorded. There was a large attendance of Fellows of the society, the hall being almost inconveniently crowded. After the oration opportunities for social intercourse were afforded and music was provided.

BROMPTON HOSPITAL LECTURES.

LECTURES and demonstrations, free to all qualified medical practitioners and students of medicine, will be delivered at the Hospital for Consumption and Diseases of the Chest, Brompton, every Wednesday from May 24th to July 5th inclusive, at 4 P.M., with the exception of the lecture on June 21st, which will be delivered at 3 P.M. The lecturers and subjects are as follows: May 24th, Dr. R. Maguire on Prognosis in Pulmonary Tuberculosis; May 31st, Dr. Arthur C. Latham on Pleurisy and its Relation to Tuberculosis; June 7th, Dr. S. H. Habershon on Hæmoptysis; June 14th, Dr. Percy Kidd on Pericarditis; June 21st, Dr. Horton-Smith Hartley on Pneumothorax; June 28th, Dr. Hector W. G. Mackenzie on Mitral Stenosis; and July 5th, Mr. J. Stanley Boyd on Tuberculous Disease of the Spine in Adults.

THE NATURE OF THE SILVER REACTION IN ANIMAL AND VEGETABLE TISSUES.

As a reagent in histology silver nitrate has been of the utmost service in elucidating the structure of certain tissues. The nature of the selective action of this reagent, however, has so far not been cleared up, although a great number of investigations have been made as to what the compound is that is formed and as to the changes which take place on its exposure to light. Some observers have maintained that the silver compound is a mixture of a chloride and an albuminate, both of which become coloured when exposed to the light, while others have assumed the presence of an albuminate compound only. The point is that when a silver salt is added to a solution of one of certain organic compounds and the mixture is exposed to light a more or less coloured product soon appears, the formation of which is regarded to be due to reduction. The question has been very thoroughly studied by Dr. A. B. Macallum, professor of physiology in the University of Toronto, and his conclusions, which are embodied in a paper recently read before the Royal Society, seem convincing as to what really takes place when a silver salt reacts with tissues. Professor Macallum started his investigation under the impression that the reaction of proteids with nitrate of silver in sunlight is due to the presence of chlorides only, in which case it is obvious that if proteids could be thoroughly freed from chloride the former would give no reduction compound with the silver salt. He therefore proceeded to prepare proteid absolutely free from chlorides and to subject the product to the action of silver nitrate under the influence of sunlight. He found that the egg albumins and the serum albumins and globulins, which had been carefully treated with a view of eliminating haloid salts, did not yield any reaction whatever with the silver nitrate reagent, even after weeks of exposure to bright sunlight, although the original unpurified material in every case gave an intense reduction effect. Similarly, the gelatin of commerce gave an intense reaction with the silver reagent in sunlight but on the elimination of the haloid salt—that is, chloride—no reaction with silver nitrate after remaining two weeks in sunlight was obtained. Even crude preparations of commerce gave no change after being purified from chlorides in the way indicated. Similar results were obtained with vegetable proteids. From this investigation it seems clear that the reaction which animal and vegetable tissues give with nitrate of silver may be attributed to halogens in haloid form and possibly to taurine and creatine and that proteids and gelatin do not when freed from traces of haloid give the slightest colour reaction with the reagent. As to taurine and creatine these occur in animal tissues in such inappreciable quantity as probably to be outside consideration. The result is that by appropriate selection of tissues of animal and vegetable forms for treatment with the reagent it is possible to determine with a considerable amount of certainty and a very great degree of accuracy the distribution of chlorides and perhaps also of other haloids in various cytological elements. Professor Macallum is pursuing this very interesting inquiry and already he announces two highly important results—namely, that intercellular material and structures, including the so-called cement substance of von Recklinghausen, are rich in chlorides and that normal nuclei of animal and vegetable

cells are absolutely free from them. The experiments incidentally have a bearing upon the action taking place on the sensitised photographic plate.

THE ROYAL INSTITUTE OF PUBLIC HEALTH.

A SPECIAL summer course of lectures are being delivered at the Royal Institute of Public Health from May 11th to July 6th inclusive. On the first-named date Mr. T. W. Aldwincle, F.R.I.B.A., dealt with the subject of the Construction of Public Health Laboratories, and on May 18th and 25th respectively Dr. R. Tanner Hewlett will take for his subject the Etiology of Epidemic Diarrhœa and Professor Thomas Oliver Diseases of the Lungs caused by Dusty Trades; on June 1st Colonel David Bruce, R.A.M.C., will lecture on Sleeping Sickness; on June 8th Dr. George Newman will discuss the question of Milk-borne Diseases; on June 15th Mr. W. J. Dibdin, F.I.C., will deal with the Bacterial Treatment of Sewage; on June 22nd Major William Boog Leishman, R.A.M.C., will lecture on the subject of Kála Ázar and Tropical Cachexia and their Relation to the New Parasites; on June 29th Professor Sheridan Delépine will discuss Anthrax in Great Britain; and on July 6th Mr. Alexander Macmorran, K.C., will deal with Some Legal Difficulties in the Administration of the Public Health Statutes. The lecture hour is 5 P.M.

Dr. Henry Head will deliver a special address at the Royal Medical and Chirurgical Society on the Afferent Nerves under a New Aspect on Tuesday, May 23rd, at 8.30 P.M. The conclusions expressed are drawn from investigations carried out in conjunction with Dr. W. H. R. Rivers, Fellow of St. John's College, Cambridge, and Mr. James Sherren, assistant surgeon to the London Hospital.

THE annual dinner of the Indian Medical Service will be held at the New Gaiety Restaurant, Strand, London, W.C., on Thursday, June 8th, at 7.45 o'clock, when the chair will be occupied by Surgeon-General James Cleghorn, C.S.I. Officers intending to be present should communicate as soon as possible with the honorary secretary, Lieutenant Colonel P. J. Freyer, 46, Harley-street, London, W.

THE annual dinner of the Epidemiological Society of London will be held at the Grand Hotel, Trafalgar-square, London, W.C., on Friday, June 30th, at 7.15 P.M., when the chair will be taken by the President, Dr. B. A. Whitelegge, C.B., H.M. Chief Inspector of Factories. Application for tickets may be made to the honorary secretaries, Dr. H. Timbrell Bulstrode and Dr. W. H. Hamer.

THE King has sanctioned the following promotion in, and appointments to, the Order of the Hospital of St. John of Jerusalem in England—viz., Knights of Grace: Charles Cotton, M.R.C.S. Eng., F.R.C.P. Edin. (from Honorary Associate); Lieutenant-Colonel Sir James Richardson Andrew Clark, Bart., C.B., R.A.M.C.; and George Lane Mullins, M.A., M.D. Dub.

A TELEGRAM from the Governor of Hong-Kong received at the Colonial Office on May 15th states that for the week ending May 13th there were 17 cases of plague and 12 deaths from the disease.

A NEW home for men in connexion with the Metropolitan Convalescent Institution has been built at Little Common, Bexhill-on-Sea, and will be opened on Saturday next, May 27th.

A NOTE UPON THE NEILSON SYSTEM OF SEWAGE PURIFICATION.

By H. LAING GORDON, M.D. EDIN.

CONSIDERABLE interest has been aroused in Italy amongst sanitarians by the application of a new system of sewage purification to cesspools. The usual method of sewage disposal in Italian towns is by deposit of the house sewage into a cesspool directly connected with the house. These cesspools are emptied with more or less regularity, but, as all travellers on the continent know, their presence leads to the fouling of the atmosphere. The new system for which Mr. Montgomerie Neilson of Florence is responsible is said to be free from the objections pertaining to the old system. It is claimed that no odours whatever are given off by it, that the cesspool never requires to be emptied, and that the effluent may be syphoned away perfectly clear and drained into the ordinary surface drain. Indeed, the inventor makes the statement that the effluent is the purest effluent produced by any system of sewage purification. A further important statement maintains that disease germs are completely destroyed within the cesspool.

It will be agreed that if these statements can be wholly proved a very important advance has been made. I have had the advantage of seeing the new system in action and of obtaining a partial explanation of the mode of action from the inventor who has patented his system throughout the world.

The following is Mr. Neilson's own statement regarding his system: "By means of this discovery it is possible to convert a cesspool full of sewage into clear water in a sufficiently short time to allow of the clear water running off whilst the fresh sewage takes its place. A particular species of specially cultivated micro-organism is introduced into the cesspool. These speedily bring about the natural process of decomposition by which the sewage is resolved into gases and clear water. The cesspools are aero-anaerobic. This means that the sewage is at one part of the cesspool in contact with air whilst at another part it is deprived of air. These different parts of the cesspool are inhabited by different colonies of micro-organisms, each doing its own particular duty, devouring any casual disease germs, splitting up gases and preventing their noxious exhalations, and finally allowing the altered sewage to run off as clear water. The cesspool merely consists of a tank provided with (1) a sewage inlet; (2) an outlet for the altered sewage; (3) a ventilator; and (4) a passage through a partition built in the cesspool to separate the micro-organisms into two divisions. There is besides a separate chamber with an automatic flushing syphon. The cesspool does not need to be emptied. It empties itself automatically. No smell whatever is given off. Not only is the cost of emptying saved but the risk of conveying disease is avoided because the anaerobic bacteria, or disease germs, which flourish in the absence of oxygen, become a prey to their ravenous enemies, who in comfortable surroundings and with plenty of food and air transform the solids into gas and water with magic rapidity. As an extreme precaution the transformed liquid can be treated automatically in a patented, antiseptic well which destroys effectually every living organism, leaving a sterilised effluent. In country places where there are no rain drains the liquid can be run off or be thrown on the land as manure. The cesspool is of indefinite durability and once it is installed requires no attention and involves no working expense."

The municipality of Florence has investigated Mr. Neilson's system and has granted him permission to apply it wherever desired throughout the city and to discharge the transformed liquid into the street drains. The following is the certificate of the analyses of the effluent made by the municipality on the strength of which Mr. Neilson obtained his permission.

Sample No. 1.—Cesspool in Lung'Arno Guicciardini No. 11. Physical characters: clear, inodorous water. Reaction markedly alkaline. Fixed residue = 0·40 per 1000 evaporated at temp. + 110° Cent. Organic matter = 0·14 per 1000. Reaction shows large amount of chlorides, traces of sulphates and nitrates.

Sample No. 2.—Cesspool at Parsonage of Castello. Physical characters: clear, inodorous water. Reaction markedly alkaline. Fixed residue = 0·53 per 1000 evaporated at temp. + 110° Cent. Organic matter = 0·07 per 1000. Reaction shows large amount of chlorides, traces of sulphates and nitrates.

I add a copy of another analysis made by the Royal Technical Institute of Florence:—

Physical characters: The liquid is colourless, slightly opaline on account of finely divided solid matter held in suspension and the large number of micro-organisms. Odour very faint, almost imperceptible. Specific gravity at 15° = 1002. Reaction, slightly alkaline. Substances held in solution: iron, lime, magnesium, potassium, sodium, silicic acid, sulphuric acid, hydrochloric acid, phosphoric acid, ammonia, and traces of nitrogenous organic matter. Tests for nitrates, nitrites, and sulphuretted hydrogen gave negative results. A test to determine the quantities gave the following results: Matter in suspension = 0·067 per litre; residue at 100° = 3·128 per litre; ash = 0·3448 per litre; chloride = 0·1603 per litre; organic nitrogen = 0·302 per litre; nitrogen as ammonia = 0·11 per litre; total nitrogen = 0·412 per litre. From the results of these analyses the said liquid taken from the bacteriological cesspool in Via Aretina, N. 6, may without risk be discharged into the city drains.

And a third analysis made by Professor Ubaldo Mussi of Florence:

Specific gravity, 1002; reaction, slightly alkaline; colour, pale amber yellow; odour, almost imperceptible and not disagreeable, after a short exposure to the air it disappears entirely; appearance, opalescent; ammonia, present in small quantity; nitrites, none; nitrates, none; organic matter, 0·0016 per cent.; alcohol, none; albuminous substances, none; urea, none; lime, traces; chlorides, traces; sulphates, traces; phosphates, none. In the sediment obtained by centrifugal process several paramecium coli were found, some non-characteristic, and therefore indefinable, detritus. The opalescence of the liquid is due to the paramecium; on standing a short time it becomes quite clear—i.e., on the death of the paramecium whose life in the liquid is of very short duration. In conclusion, the component parts of the feces, including the urine, contained in the cesspool in Lung'Arno Guicciardini N. 11, subjected to treatment by the Montgomerie Neilson system, are totally decomposed and transformed, and the liquid produced is, in its chemical composition, very different from sewage and presents rather the physical characters of inferior drinking water, hence its discharge into the sewers is perfectly harmless.

The practical result of the investigation on the part of the municipality has been the reception of a large number of orders for installations from municipalities and private persons throughout Italy and applications for particulars from other countries. Mr. Neilson informs me that the system is now being investigated by the Pasteur Institute of Paris. It may be seen in full working order in many houses in Florence and there is no doubt that the statement that evil odours are abolished and that the effluent is colourless as well as odourless is absolutely true. I have inspected the effluent on a good many occasions. I have found it slightly milky at first owing to the living infusorians present but it becomes perfectly clear after standing a few days when the infusorians have perished. It has a faint smell of truffles at first. One installation has been in action now for three years and is said to have required no attention whatever and to be absolutely satisfactory.

The most important point to elucidate is—What influences bring about these results and how do they work? As I have said already it is difficult to obtain precise information on this subject. I have, however, been shown under the microscope by Mr. Neilson specimens taken from the cesspools and, as far as I can make out, the work is done by one variety of anaerobic bacterium, which he cultivates specially, and by several varieties of infusorians, which are, of course, aerobic. I have not seen the anaerobic bacterium but Mr. Neilson informs me that it works at the bottom of the cesspool upon solid excrement, breaking it up and rising to the upper regions of the cesspool with the disintegrated particles. Here these bacteria form food for some of the infusorians which in their eager endeavours to devour the bacteria further break up the particles of solid matter. Under a magnifying power of 200 diameters I have had two brief glimpses at the infusorians and observed at least five varieties. They all seem to eat voraciously and are all free-swimming and marvellously active. Their movements vary, some darting rapidly, some vibrating, some twisting, and some rotating. The larger varieties are distinctly ciliated and my impression is that they all belong either to the ciliata or flagellata. A very definite mouth is present in the larger varieties. Mr. Neilson states that one variety eats the solid matter, two varieties destroy the anaerobic life, another one feeds on the matter which is in process of liquefaction, and a fifth eats incessantly apparently whatever it comes in contact with, including bacteria, cocci, &c., and takes a large share in the clearing of the liquid. I gather from the inventor also that these infusorians split up the gases and that the ultimate gases formed are carbonic acid gas and marsh gas "and others which have a smell like truffles." He is very emphatic in stating that these animalcula can live only when the gases are allowed to escape. He informs me that the lowest temperature at which the system has hitherto been found to work successfully is 4° C. and that the highest hitherto tried is 38° C. It will be understood that a system with the pretensions of this one will find its greatest application in countries where cesspools are used for sewage disposal, but Mr. Neilson states that he is fully prepared to apply it on a large scale to the water drainage of cities and asserts further that his system will displace others on account of its efficiency, cheapness, comparative rapidity, and automatic action. It will be observed that he places no reliance whatever upon the bacteria which are ordinarily found in sewage; he says that he has no use for them. This and the use of infusorians characterise the system and mark it off from other systems of bacterial sewage purification. I can obtain no absolute proof of the destruction of disease germs under the process.

Mr. Neilson himself confesses that he is an amateur at the subject but has devoted six years entirely to its investigation. I understand that the inventor's attention was first directed to the subject by observations upon the life found in pools into which the house drainage of his villa near Siena ran. One cannot fail to be impressed by Mr. Neilson's enthusiasm for his subject and by the successful results which are evident on an inspection of one of his cesspools in working order. The naked-eye superiority of Mr. Neilson's effluent placed side by side with specimens from Sutton and Exeter is striking. Even if all the statements made do not prove on further investigation to be entirely correct, nevertheless every dweller in the cesspool-riddled cities of the continent will have reason to be grateful if the system is more generally applied. Indeed, in Florence already many of us are thankful for the removal of offensive odours from spots which we frequent or from the neighbourhood of our dwellings, and it is a further satisfaction to know that the municipality has approached Mr. Neilson with a view to the application of his method to that eyesore of the city, the system of urinals.

Florence.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

THE CENTENARY PROGRAMME.

THE following and final programme, celebrating the Centenary, has now been arranged by the council of the society with the help of the Centenary Committee. The information has been published in our columns already in detail but our readers may wish to see the complete arrangements as a whole.

Monday, May 22nd, "Centenary Day."—At 5 o'clock P.M. the President will receive the Honorary Fellows and Fellows at the Society's House, 20, Hanover-square, W. Light refreshments will be provided from 4.30 P.M. onwards.

At 5.15 the President will deliver a short congratulatory address. After the address he will admit the new Honorary Fellows and present them with their diplomas.

The Centenary Banquet will be held at the Hotel Cecil at 8 P.M., but Fellows and guests are requested to be seated in their places punctually at 7.45 in order to be ready to receive His Royal Highness the Prince of Wales.

At 7.45 the Prince of Wales will sign the roll of the society, be admitted an Honorary Fellow, and receive his diploma.

Tuesday, May 23rd.—At 8.30 P.M. Dr. Henry Head, F.R.S. (Marshall Hall prizeman), will deliver a special address on the Afferent Nerves under a New Aspect. The conclusions expressed in the address will be drawn from investigations carried out in conjunction with Dr. W. H. R. Rivers and Mr. James Sherren. After the address there will be an informal reception by the President and council.

Wednesday, May 24th.—There will be a conversazione in the Natural History Museum, Cromwell-road. A reception will be held by Sir R. Douglas Powell, P.R.C.P. Lond., the President of the Society, and Lady Powell from 9.30 P.M. to 10.30 P.M.

An arrangement has been made with the District Railway Company by which on this evening the subway connecting the South Kensington station with the grounds of the museum will be open for the use of guests.

A small, but it is hoped an interesting, exhibition will be arranged in the society's rooms for the inspection of Fellows and others from Monday, May 22nd, to Thursday, May 25th inclusive, between the hours of 11 A.M. and 6.30 P.M. each day.

MEDICINE, ITS PRACTICE AND ITS PUBLIC RELATIONS.

CHAPTER XII.[1]

THE POOR-LAW AND MEDICAL SERVICE (*Continued*).

The Poor-law Medical Service in Ireland.—Death of Mr. William Smyth of Dungloe.—The Grievances of the Dispensary Service.—The Absolutely Necessary Reforms.

THE condition of the Poor-law medical service in Ireland has for many years been a scandalous blot on the administration of the country. Politicians, journalists, and enlightened general opinion have condemned the system; the medical press has called loudly and persistently for its improvement; the Irish Medical Association more than four years ago published a statement of studied moderation every word of which showed the necessity for immediate reform; the leaders of medical opinion in Ireland, in the medical schools of Dublin, Belfast, Galway, and Cork have advised their pupils not to take office in the service—advice which has not been neglected; and the Local Government Board of Ireland, under whose jurisdiction the dispensary districts lie, has admitted the necessity of ameliorating existing conditions. But nothing has been done that really counts when the magnitude of the evil is realised.

In the same way as the case of Mr. J. Lamont serves to illustrate by one lurid story the troubles of the Scottish Poor-law medical officer, so the infinitely sadder event of Mr. William Smyth's heroic death may be regarded as a supreme example of the trials of the Poor-law medical officer in Ireland. Here the sacrifice of a noble life proved terribly dramatically and finally that the Poor-law medical service in Ireland must be reformed. Mr. Smyth's death is too recent to need more than the briefest record for all its tragedy to recur to our mind. He was dispensary medical officer of Dungloe No. 2 District, co. Donegal, and died on Nov. 22nd, 1901, from an attack of typhus fever contracted in his efforts to fight that disease which had broken out in part of his district, the island of Arranmore on the western seaboard of Donegal. Mr. Smyth was most anxious to remove his patients to the isolation hospital at Glenties on the mainland but met with such difficulties and opposition that Dr. B. McCarthy, Local Government Board inspector, was sent to his assistance. As the fishermen would neither lend their boats nor row the fever patients across, an old and unseaworthy boat was purchased by the relieving officer and the two medical men, who were novices at rowing, set off for the island. Here fresh difficulties arose, as the friends of the patients opposed all removal which was only accomplished by the aid of the police. On the homeward journey the medical men hailed a boat which was manned by six policemen and asked to be taken in tow to Burton Port, but these men refused to render any assistance, fearing infection. Tired out with their unaccustomed exertions the two intrepid rowers reached Burton Port at last where an ambulance awaited their arrival and the patients were removed to Glenties. Mr. Smyth caught typhus fever and died in a few days, a veritable martyr to his splendid sense of duty.

This narrative epitomises the position of the Poor-law medical officer in Ireland. Here we have a man left single-handed amid a frightened, ignorant, callous peasantry, to combat a dangerously infectious disease as best he could. The sea must be passed before he can reach the bovels of the sick; he has no skilled assistance and no lay assistance. The representative of the department under which he works gives strenuous help at the last, but the dispensary medical officer dies at his post. And he dies for no purpose, for if similar circumstances arose to-day there is no guarantee against similar issues.

The manifest and manifold grievances of the medical officers of the Poor-law or public dispensary service in Ireland have been set forth frequently and clearly. In the columns of the *Journal of the Irish Medical Association*,[2] the *Medical Press and Circular*, and THE LANCET full particulars will be found of all the abuses under which the luckless officer of the Dispensary Medical Service abides. But no purview of the medical profession in its public relations can be complete which does not deal with the matter in detail, however often it may have been dealt with before, for the dispensary medical officers are the Poor-law officers, sanitary officers, and general practitioners of Ireland, and a large proportion of the Irish population comes into contact with no other medical men. Few people in England understand the hardships under which the Poor-law medical officers work in Scotland or Ireland and some may even be content to believe that the attitude of the bureaucracy, which stigmatises the officers of both services as chronic malcontents, is justifiable.

The main grievances of the medical officers of the Poor-law system in Ireland are the hardship of their work, the scantiness of their pay, the absence of promotion, the difficulty of obtaining holidays, the absence of definite arrangement for superannuation pensions, and their anomalous position as servants of the Poor-law guardians. They can be conveniently considered in the order in which I have set them down.

The following are the duties appointed for the dispensary medical officer by the Irish Local Government Board in respect of the dispensary work. He must attend the dispensaries on such days and hours as the Local Government Board may direct and afford outdoor medical relief to all poor persons presenting the "black ticket" for dispensary treatment. He must attend the patient's residence when he receives a "red ticket" and treat the case to its fortunate or unfortunate issue. He must keep a register of all patients attended either at their homes or at the dispensary and send the book monthly for inspection by the guardians, and he must also give a certificate, if needed, of the state of health of any dispensary patient if called upon to do so by the guardians. He must keep stock of his drugs and appliances and make quarterly application to the Local Government Board for new supplies. He must almost invariably dispense his own medicine, for the last annual report of the Local Government Board of Ireland shows that in 746 dispensary districts only 47 compounders or dispensers are kept. He must send samples out of each consignment of drugs to be tested, he must pack up and return all empties. He must report to the guardians monthly his hours of attendance and the duration of his stay at the dispensaries. He must send quarterly to the Local Government Board and to the board of guardians a statement showing the number of tickets issued, the number of tickets cancelled, and the number of lunatics certified, as well as the number of cases that have occurred of small-pox, typhus fever, diphtheria, typhoid fever, and scarlet fever. He must answer questions about dispensary arrangements and anything else that either authority may want to know.

The tickets alluded to as "red" or "black" are in the gift of the guardians and are issued by them personally or through their relieving officers or wardens to the sick poor. The black ticket entitles its holder to medical advice and medicine at the dispensary; the red ticket is an order to the medical officer to visit the patient at his home. The guardians are supposed to be the sole judges of who is "poor," but the wardens, as the official ticket issuers are called, can distribute the tickets as they like, and they frequently abuse the discretion vested in them. This does not signify so much in the matter of the black ticket as the medical officer has to attend at the dispensary at certain hours and it does not make much difference to him when he is there if some of the patients to whom he has to administer charitable relief can really pay for his services. Every such abuse of the system diminishes the medical man's chance of making money out of private practice, but in many districts of Ireland this chance is so slight that the luckless medical men see it made slighter without particular resentment. But the matter is different when red tickets are abused. The red ticket is an order, and some boards of guardians construe it as a peremptory order, to visit the sick at their own homes. These homes may lie widely apart from each other and from the medical officer's house, journeys in cars over vile roads or in boats over rough seas may be necessitated, so that anything like an abuse of the issue of red tickets

[1] Chapters I., II., III., IV., V., VI., VII., VIII., IX., X., and XI. were published in THE LANCET of Feb. 18th (p. 447), and 25th (p. 517), March 4th (p. 583), 18th (p. 736), and 25th (p. 817), April 1st (p. 877), 15th (p. 1017), 22nd (p. 1089), and 29th (p. 1151), and May 6th (p. 1218) and 13th (p. 1287), 1905, respectively.

[2] See especially an admirable "Report on the Poor-law Medical System in Ireland, with special reference to the Dispensary Medical Service" by the Special Commissioner of the British Medical Journal—British Medical Journal, March 26th, 1904.

leads to most serious consequences. The medical man's time is occupied in long and unremunerative travel and his shallow purse is drained by boat- and cart-hire. But these things do not prevent the wrongful issue and employment of red tickets, while unfortunately it is not easy to say in Ireland who is and who is not entitled to the benefits of rate-paid medical attention.

So much for the dispensary officer's duties as a dispensary officer pure and simple, and they would seem to account for much of his time. The dispensary medical officer is, however, medical officer of health for his district also, and the whole sanitary administration of rural Ireland, such as it is, is in his hands. The larger cities, Dublin, Belfast, Londonderry, Limerick, and Cork, for example, have a proper medical officer of health, but there is no provision of county medical officers as obtains in Scotland. The dispensary medical officer is the only person in the countryside with an elementary knowledge of sanitation, but he is powerless to do anything. His additional salary as health officer amounts to only some £20, his time is over-occupied with his dispensary duties, he may have a few private patients to whom he must give a certain amount of attention, while he must feel that any efforts which he makes towards improving matters will be largely wasted. The people will not understand his object and the majority of his uneducated masters, the guardians, will share their ignorance. The dispensary medical officer is also the public vaccinator, factory surgeon, and very usually the registrar for births, deaths, and marriages. For these appointments he receives small fees which he is glad to earn. He also attends the men of the Royal Irish Constabulary Force and the coastguard and lighthouse staff. Such is a brief enumeration of the work performed by the dispensary medical officer.

The average pay is a fraction above £100 per annum as dispensary medical officer. To this pittance has to be added from £10 to £25 received for the discharge of sanitary duties but with this addition we find that out of 810 dispensary medical officers 500 receive less than £150 per annum, only 2 receive more than £200, and 32 receive under £100. Fees of 2*s.* 6*d.*, 2*s.*, 1*s.*, and 6*d.*, as registrar, vaccination officer, certifying factory surgeon, and surgeon to the Royal Constabulary and the coastguard and lighthouse staff have also to be added, and like the English guardians the Irish guardians point to vaccination fees as an excuse for starvation salaries. In the dispensary service there is virtually no promotion, so that a man cannot comfort himself for taking a small salary while he is young with a feeling that as he grows older and the expenses of a family begin to fall upon him his income will increase to meet his needs. Nor is there any certainty of a pension. It is within the discretion of the board of guardians to grant a pension to a retiring dispensary officer but they can refuse it to anyone who has offended them. Then the unfortunate medical man, who cannot be expected to have made any great provision for old age out of his income, must toil on in harness until he dies, being forced by penury to continue the work, however unfit to do his duties.

Tables I. and II. show the superannuation allowances, some of them terminable at a certain date, of all medical dispensary officers and workhouse medical officers paid during the year ending March 31st, 1903, which I have extracted from the figures in the last report of the Local Government Board of Ireland. The age, period of service in years, and salary are also given.

These figures, taken as a whole, form an unanswerable indictment of the system. We have only to look at the long average length of service and the low average size of pension to come to this conclusion. I have placed an asterisk (*) against a few special cases. It will be seen that out of 82 hard-working men 13, or nearly one-sixth, were compelled to remain in harness until over 70 years of age, one working until his eighty-fourth year. The Local Government Board of Ireland acknowledges that this position exists but seems unable to bring itself to take the initiative in promoting any remedy. No one should be placed in circumstances like those of the Irish dispensary medical officer and be compelled to abide in them until old age overtakes him, because he has been unable to make provision for the end of life and has no certainty of obtaining a pension. Note the case of the dispensary medical officer numbered in the first table "63" who was for 45 years in the service and who, when verging on 80 years of age receives a pension of a little more than

TABLE I.—*Medical Dispensary Officers.*

Number.	Age.	Service.	Salary.	Superannuation.
1	53	19½	£112	£55
2	50⅓	20¼	104	52
3	69½	30½	127	63
*4	70½½	42½	198	130
*5	75	48¼	128	85
6	66	30½	152	50
*7	76⅓	42⅔	139	92
8	67⅔	43⅔	179	119
*9	78⅔	51¼	133	88
*10	62½½	43⅓	154	102
*11	63⅔	39⅔	108	72
*12	83⅓	31	286	191
13	58⅓	29½½	198	129
14	58⅔	25⅓	126	74
15	60¼	28⅔	109	69
*16	67½	34½	277	185
17	45⅓	21⅔	103	35
18	64	28⅔	161	100
19	47½	21½	106	51
20	56½	28½	106	67
21	74½	38½½	119	75
22	39½	16	128	44
*23	72½	45⅓	173	112
24	69½	26½	171	60
25	56½	30	153	102
*26	71⅔	45⅔	174	116
27	36⅔	9⅓	126	31
28	69½	24½	156	88
29	55	29	289	139
30	66	25½½	163	95
31	66	30½	162	108
32	40	14⅔	153	60
33	64⅓	24	139	71
34	53⅓	23	155	85
35	40	11⅔	145	50
36	60	29¼	130	84
37	60½	24½	130	70
38	62½½	39½	131	85
39	Not given.	14	141	90
40	61¼	30½	155	95
41	53½	28	129	82
42	60½	18⅓	131	45
43	68⅔	33⅓	137	91
44	50½	26½	120	50
45	55⅓	32⅓	143	95
46	61½	33½	138	92
47	68½	38⅓	156	110
48	65	21⅓	160	35
*49	70½½	372	235	145
50	69½	36	133	88
51	57⅔	32	133	89
52	56¼	28½	149	94
53	57½	20½	132	60
54	57	30	136	75
55	57	16⅔	191	51
56	58½	31	173	115
57	28	½½	151	2 10*s.*
*58	71	29	148	99
59	45⅓	20¼	172	62
60	58	22½½	127	50
61	45½	11½	123	43
62	48½	23⅓	128	48
*63	78⅓	45½	121	81
64	51⅔	25⅔	171	80
65	53½½	29	112	72
*66	76⅓	54⅓	170	98
67	55⅓	31⅓	153	79
68	64	37⅓	168	112
69	76½	38⅔	157	134

TABLE II.—*Workhouse Medical Officers.*

Number.	Age.	Service.	Salary.	Superannuation.
1	67 1/12	43 5/12	£90	£60
2	61	32	150	80
*3	78 1/4	44 1/4	130	86
4	57 1/12	28 11/12	80	50
5	63	30 7/12	244	160
6	32 1/4	4 4/12	60	7
7	57	28	120	80
*8	65	41 5/12	80	53
9	50 1/4	22	90	48
10	42 1/4	16 7/12	60	20
11	51 1/4	25 1/4	110	64
12	67 1/12	38 1/4	100	63
*13	70	37	100	66

30*s.* per week. From one such text a sermon of complete indictment of the whole system could be preached. Note, also, the number of retirements at an unusually early age. The cause assigned to most of these retirements is physical breakdown. The exacting nature of the life of the Irish dispensary medical officer could not be shown in a more lurid way, and a factor in producing this frequent breakdown is the monotonous persistency of the work. There is no definite regulation providing for any recreation or holiday leave for the medical officers. Until recently the medical officer got no holiday at all. The guardians refused to make any grant towards the expenses or the fees of a substitute, and the medical officer never had money enough to pay a substitute and also to go away. And so to the manifest detriment of his own interests and those of the community whom he served, he remained day in and day out on his dreary rounds. The position has been improved by a general order made in 1899 by the Local Government Board of Ireland for an annual vacation not exceeding four weeks for each medical officer, while three years later recoupment was provided from the Board of one half of the amount paid by the guardians with the Local Government Board's sanction. It will be seen that the unfortunate medical officer has to get the acquiescence of the guardians, who in their turn have to get the sanction of the Local Government Board. There ought not to be any necessity for all this routine. In every walk of life it is now recognised that a hard-working employé has a right to a holiday, that he ought to be allowed to go as a matter of right in enjoyment of his salary, and ought not to be taxed by having to pay a substitute. The fact that many, a majority, of the officers of the Irish Medical Poor-law Service do now get these fitting opportunities for a vacation shows that the local authorities who control the service are waking up to the situation. Soon the officer's right to a holiday will be taken by him as a right, at present it is yielded to him after requests, and perhaps bickering, as a concession.

And over and above all these grievances there is the medical position to be remembered. Always the razor is used to cut the firewood. The scientific man is never spared, if the guardians or the Local Government Board of Ireland can help it, by a proper supply of assistants to take the lower administrative details off his hands. Imagine 746 dispensary districts with but 47 compounders, and 119 dispensary assistants among them, so that the great majority of the dispensary medical officers have to dispense their own medicine. Again, there is a dearth of midwives who might act as assistants to the medical officers and spare them much arduous waiting and watching, for 551 women do not go far when it is remembered how much of the country the poor relief system of Ireland has to serve. The unpacking of medicines, the despatching of samples, and the returning of empties, clearly the work of a boy or porter at a few shillings a week, have to be done in most cases by the medical officer himself. Then his clerical work has to be considered. He has to keep records of his work to be shown to the guardians, he has to supply statistics for the consideration of the Local Government Board, and no amount of overwork is allowed to excuse a default.

Reform is urgently needed and everyone knows it. There should be better pay, there should be more assistance, the dual control of the dispensary medical officers by central and local authority should be less vexatiously in evidence, the elections of the medical officers should be managed on proper principles, and the Local Government Board should support the medical officers where the local authorities try to oppress them. Everyone knows the crying need of these things but nothing is done.

(To be continued.)

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on May 13th, Mr. JOHN TWEEDY, the President, being in the chair.

Mr. Herbert J. Paterson was introduced and the PRESIDENT handed to him a cheque for the amount of the Jacksonian prize, together with a document declaratory of the award.

It was resolved that diplomas of Membership should be issued to 108 successful candidates.

A report was circulated, which had been drawn up by Dr. P. H. Pye-Smith, chairman of the Laboratories Committee, on the history and work of the Laboratories since their opening in 1890. The report was received and entered on the minutes and the best thanks of the Council were given to Dr. Pye-Smith for his interesting and valuable account.

The PRESIDENT reported that the solicitor of the College had made inquiries regarding the person calling himself wrongfully F.R.C.S. and stated that he had instructed the solicitor to take steps with a view to prosecuting this person for his false assumption of the title F.R.C.S.—The proceedings of the President were approved and confirmed.

The Council resolved to give a reception at the College to the members and visitors of the Atlantic Union on a date to be settled later.

The Council elected a Fellows Dinner committee.

A letter was read from the registrar of University College, Sheffield, stating that in the Charter for incorporating a University of Sheffield which the Privy Council has recommended His Majesty the King to grant, provision has been made for the Royal College of Surgeons of England to have a representative on the University Court and asking that steps may be taken for the appointment of such a representative. The Council appointed the President as their representative.

The PRESIDENT reported that he had received a letter from Mr. Thomas Bryant presenting to the College some letters and a photograph of historic interest.—The best thanks of the Council were given to Mr. Bryant for his gift.

The PRESIDENT reported that he had approved of a proposal by the executors of the late Mrs. Jane Begley to purchase £800 2½ per cent. Consols in the name of the Royal College in satisfaction of Mrs. Begley's bequest to the College.—The President and the Vice-Presidents were requested to draw up regulations for the award of the Begley scholarship.

The Council resolved—

That it be referred to the committee of management to consider and report as to the desirability of treating chemistry, physics, and biology as subjects of preliminary education and of requiring that an examination in them should be passed before the recognition of the commencement of medical studies, and further to report as to the desirability of the two Colleges approaching the universities and other examining bodies with a view to adopting a five years' curriculum of professional study from the date of passing the preliminary science examination.

ASYLUM REPORTS.

City of London Asylum (Annual Report for 1904).—During the year under review there were admitted into this asylum 178 patients; the discharges amounted to 142, of whom 57 had recovered, and the deaths to 34. Only one of the deaths was due to pulmonary tuberculosis, a very satisfactory record. The resident population at the close of 1904 was 565, 257 being private patients. The visiting committee reports the resignation of the medical superintendent, Dr. Ernest W. White, who retires upon a liberal pension, and expresses its high appreciation of his services. He is succeeded by Dr. R. H. Steen. The private department continues to be an important feature of this asylum; a table is given showing its steady growth since its initiation in 1892. During 1904 86 private patients were received. The profits arising from the maintenance of this

class allow of the transfer of a considerable surplus in relief of the county rate. According to the printed regulations the charge for the maintenance of private patients is £1 1*s.* weekly but the Commissioners in Lunacy in their report state that the charge is from one to two guineas. In either case the charge is a moderate one and should meet a genuine need. The charge for the home patients is given as 12*s.* 3*d.* per week, which is high in comparison with the average of public asylum charges. Dr. White's report makes mention of a case of suicide by hanging by means of a rope attached to a gas pipe. The general health of the asylum was good. Only one case of typhoid fever occurred, whereas in previous years there had been outbreaks of typhoid fever and colitis which were due to contamination of the asylum well and disappeared on changing the water-supply. The Commissioners comment on the fact that at this asylum the practice of allowing patients to go out on trial, which has worked advantageously in most asylums, has never been adopted and they commend its adoption. Their report speaks favourably of the condition of the institution throughout.

St. Andrew's Hospital for Mental Diseases at Northampton for the Middle and Upper Classes (Report for 1904).—From the report of Mr. J. Bayley, the medical superintendent, it appears that this hospital received in the year 98 cases, of which 20 were readmissions; the discharges amounted to 64 and the deaths to 16. The average number resident was 405. The percentage of deaths on these was 3·95. The percentage of recoveries on admissions, excluding transfers, was 30·26. In this institution the patients pay for their own maintenance, but it appears from the report of the committee of management that 88 patients were assisted in their payments, presumably by the institution from its funds, to the extent of some £3700 in the year. In this way their payments were made up to the lowest rates ordinarily charged. This hospital has the advantage of a seaside house where patients can be sent on leave.

THE ROYAL SOCIETY CONVERSAZIONE.

"AN evening with the microscope" might fairly describe the conversazione held in the rooms of the Royal Society on May 17th. The subjects under microscopic study varied considerably in kind and comprised histology, bacteriology, marine biology, and the microscopic inspection of metallic surfaces. The exhibit of Professor J. B. Farmer, F.R.S., Mr. J. E. S. Moore, and Mr. C. E. Walker in the principal library attracted a good deal of attention. As the readers of THE LANCET might anticipate, this exhibit referred to the cellular constituents peculiar to cancerous and reproductive tissues. The structures known as "Plimmer's bodies" have been regarded as parasitic organisms or as specific cellular peculiarities confined to malignant tissues. They have recently been identified as being present also in normal reproductive tissues in which they form a definite organ of the cell during its conversion to a spermatozoon and the two preceding divisions. Close by this exhibit Dr. H. Charlton Bastian, F.R.S., illustrated the simplest kind of protoplasm. Common bacteria are found to grow freely in a solution of ammonium tartrate, from which it is evident that they must fashion their protoplasm in some way from carbon, hydrogen, oxygen, and nitrogen only, though sulphur and phosphorus (which are completely absent in this case) are commonly regarded as necessary constituents of living matter. Brevet Lieutenant-Colonel W. B. Leishman, R.A.M.C., showed the parasite of "kala-azar," a protozoal organism found in the spleen and other organs in cases of "kala-azar," an extremely fatal disease occurring in epidemic form in Assam and also in endemic form in other parts of India and the tropics. The mode of infection is not known. In artificial cultures the parasite developes into a flagellated organism closely resembling a trypanosome. Mr. H. S. Wilson, M.B., illustrated the isolation of bacillus typhosus from water by means of alum precipitation. The precipitate, which is known to be destructive to many water and sewage organisms, is without action on the typhoid bacillus. Mr. D. Findlayson exhibited a very interesting accessory to the microscope which is designed to enable the images of two different objects mounted on separate microscopic slides to be projected side by side into the field of view, thereby enabling a thorough comparison to be made of their respective points of difference and resemblance. The "comparascope," as it is called, will be obviously valuable in bacteriological work and in the detection of adulteration of starches and other substances. Mr. Carl Zeiss exhibited an optical appliance to facilitate visual perception of ultra-microscopic particles. Particles it is stated of far less than half a wave-length can be made visible. The application of the electric current to the production of high temperature was very well illustrated in certain exhibits. The Director of the National Physical Laboratory, for example, exhibited furnaces constructed of rare earths (zirconia, &c.) such as are used in the Nernst electric lamp. The furnaces are available for temperatures ranging between 800° and 2000° C. The apparatus has been used for the determination of the melting point of platinum and a model in working order was exhibited. Mr. R. S. Hutton exhibited some new models of laboratory electric furnaces. The exhibit included samples of refractory oxides fused in the electric furnace and a number of quartz tubes. Mr. R. H. Lock showed a very interesting series of specimens of cross-bred maize illustrating inheritance. The resulting cobs showed strikingly different degrees of blending of character illustrated by the differently coloured grains.

Perhaps the most popular exhibit was that of Sir William Crookes, F.R.S., who showed some very interesting specimens illustrating the action of light and of radium upon glass. Radium will produce in a few days as intense a colouration in glass containing manganese as exposure to the sun has taken years to effect. The exhibit included specimens of glass taken from greenhouses at Kew Gardens. In these instances the glass adopted had a greenish tint but by the action of sunlight the glass had become colourless, while in other cases a purple tint had developed owing to the manganese oxide present. Close by this exhibit Mr. G. W. Beilby demonstrated in a very pretty experiment the phosphorescence caused by the beta-rays of radium. Dealing with a similar subject Sir William Ramsay, F.R.S., illustrated the action of actinium or emanium emanation on a sensitive screen. The substance is obtained from pitchblende and when the emanation impinges on a sensitive screen the screen becomes luminous. The luminous patch can be "blown away" but reappears. The demonstration given by Sir Oliver Lodge in the meeting room of the use of electric valves for the production of high tension continuous current was very interesting. These valves can be employed to accumulate electricity supplied from an intermittent or jerky source and to store it at a steady high potential. Thus a small portable coil may be used to imitate some of the effects of a much larger coil by the storage and accumulation of impulses. Among the applications suggested are the separation of metallic fumes and the dissipation of fog.

The company present was a very large one and of the usual representative and distinguished character, and was received by Sir William Huggins, K.C.B., O.M., D.C.L., the president.

Looking Back.

FROM

THE LANCET, *SATURDAY*, May 19, 1827.

CARLISLE, in his first letter to Mr. PEEL,[1] says, "If, however, the greediness of a few individuals should expose this subject (man-midwifery) to free discussion, and the judgment of married men and modest women should be copiously awakened, perhaps the general custom of employing women may be again resorted to;" and in his second letter,[2] this disgusting egotist submits the following proposition:—"I, therefore, now propose the restoration of the practice of midwifery to females, beginning with the introduction of the *wives, widows, or female kindred of medical practitioners*." Hence, according to his own showing, he recommends that the wives, widows, and female kindred of medical men should addict themselves to "a *degrading vocation*," a "dishonourable vocation;" that they be "associated with nurses and gossips for whole days and

[1] Vide "Looking Back" in THE LANCET of March 4th, 1905, p. 592.
[2] Letter in *The Times* of May 1st, 1827, copied into THE LANCET of May 5th, 1827.

nights," * * * * * "in a lying-in room, where often none but ignorant women are present."

If the GENERAL PRACTITIONERS of the British empire, previously to the publication of this proposal, were ignorant of the opinion entertained of them by the *Hospital Surgeons* of London, they cannot be so now. Sir Anthony confesses, indeed, that he has not written "*unadvisedly*," which implies, we presume, that his letters have been sanctioned by his colleagues with "enlarged intellect." One would have supposed that Carlisle could have communicated his "professional thoughts" to Mr. Peel without mixing them up with charges of the most horrible description and suggestions of the most insulting character, appertaining to the professional avocations of GENERAL PRACTITIONERS and their wives. Pray who are the wives of general practitioners? Who? why, the daughters of the most respectable, the most wealthy, and independent gentlemen and merchants of England; ladies who, in no single circumstance, are inferior to the "wives, widows, and female relatives," of the ignorant, conceited, malignant, lying, insulting, boasting, hospital surgeons of this metropolis. If Carlisle had made it the chief object of his life to accomplish the degradation of general practitioners, he could not more completely execute his task than in the adoption of his proposal. The wife, quoth this benighted oyster, "may thus secure his female patients against the inroads of his competitors, and establish a respectable maintenance for such females;" so that we are to believe, first, that the talents of the general practitioner are not a sufficient security against the inroads of competitors; and, secondly, that he is incapable of procuring for his wife those comforts which, from her station in society, she requires; two inferences so truly insulting to the feelings of this class of gentlemen, that it is with pain we commit them to paper, although for the purpose of exposure and refutation. In this country, and we are delighted that it should be so, it is considered that nothing bespeaks want of talent, want of energy, want of industry, want of a correct and honourable spirit, more decidedly, than for a man to require from his wife the execution of any portion of labour as a necessary adjunct to his support, and we believe this feeling pervades even the inferior grades of tradesmen; what, amongst such people, is thought to be more reproachful than to say of a man that his wife supports, or half supports, his family; yet to this disreputable condition would Carlisle reduce the general practitioner! and thus render him a bankrupt in character, as well as in pocket, whilst his wife and female relatives would be excluded from all respectable society, through following a "degrading and dishonourable vocation." Oh that there were

———"in every honest hand a whip,
To lash the rascal naked through the world."

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 9133 births and 4486 deaths were registered during the week ending May 13th. The annual rate of mortality in these towns, which had been 15·6, 16·5, and 15·4 per 1000 in the three preceding weeks, further declined last week to 15·0 per 1000. In London the death-rate was 14·7 per 1000, while it averaged 15·1 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 4·0 in Burton-on-Trent, 5·9 in Leyton, 7·4 in Hornsey, 7·6 in Handsworth (Staffs.), 8·3 in Willesden, 9·0 in Aston Manor and in Stockton-on-Tees, and 9·9 in Walthamstow; the highest rates were 20·8 in Oldham, 20·9 in Great Yarmouth, 21·2 in Sheffield, 21·9 in Merthyr Tydfil, 23·5 in Wigan, and 23·7 in Warrington. The 4486 deaths in these towns last week included 401 which were referred to the principal infectious diseases, against 453, 460, and 469 in the three preceding weeks; of these 401 deaths, 174 resulted from measles, 110 from whooping cough, 37 from diarrhœa, 31 from scarlet fever, 27 from diphtheria, and 22 from "fever" (principally enteric), but not any from small-pox. In Hornsey, Norwich, Plymouth, Walsall, Rochdale, Burnley, Huddersfield, and eight other smaller towns no death from any of the principal infectious diseases was registered; the highest death-rates from these diseases were recorded in Hanley, West Bromwich, Smethwick, Warrington, Oldham, Sheffield, Middlesbrough, West Hartlepool, and Merthyr Tydfil. The greatest proportional mortality from measles occurred in West Bromwich, Smethwick, Coventry, Warrington, Sheffield, Middlesbrough, West Hartlepool, and Merthyr Tydfil; from diphtheria in West Hartlepool; from whooping-cough in West Ham, Hanley, Smethwick, Preston, and Middlesbrough; from "fever" in South Shields; and from diarrhœa in Wolverhampton. The mortality from scarlet fever showed no marked excess in any of the large towns. No death from small-pox was registered either in London or in any of the 75 large provincial towns. The number of small-pox patients under treatment in the Metropolitan Asylums Hospitals, which had been 17, 16, and 17 at the end of the three preceding weeks, was again 17 at the end of last week; two new cases were admitted during the week, against six, four, and four in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital at the end of the week was 2177, against 2128, 2182, and 2152 at the end of the three preceding weeks; 319 new cases were admitted during the week, against 253, 255, and 235 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 272, 306, and 256 in the three preceding weeks, further declined last week to 251, but were 20 above the number in the corresponding period of last year. The causes of 49, or 1·1 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Nottingham, Leeds, Hull, Newcastle-on-Tyne, and in 53 other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Coventry, Leicester, Liverpool, Manchester, Blackburn, Bradford, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 17·8, 18·8, and 18·0 per 1000 in the three preceding weeks, rose again to 19·5 per 1000 during the week ending May 13th and was 4·5 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 12·2 in Leith and 15·2 in Perth to 21·1 in Glasgow and 22·1 in Aberdeen. The 653 deaths in these towns last week included 32 which were referred to measles, 30 to whooping-cough, nine to diarrhœa, six to diphtheria, four to "fever," and two to scarlet fever. In all 83 deaths resulted from these principal infectious diseases last week, against 69, 59, and 57 in the three preceding weeks. These 83 deaths were equal to an annual rate of 2·5 per 1000, which was 1·2 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of measles, which had been 23, 21, and 16 in the three preceding weeks, rose again last week to 32, of which 26 occurred in Glasgow and five in Edinburgh. The deaths from whooping-cough, which had been 23, 27, and 26 in the three preceding weeks, increased again to 30 last week, and included 20 in Glasgow, four in Edinburgh, two in Aberdeen, and two in Paisley. The fatal cases of diarrhœa, which had been 12, eight, and 15 in the preceding weeks, further declined last week to nine, of which four were registered in Glasgow, two in Edinburgh, and two in Aberdeen. The deaths from diphtheria, which had been six, one, and four in the three preceding weeks, rose again to six last week and included three in Glasgow and two in Edinburgh. The fatal cases of "fever," which had been three, one, and three in the three preceding weeks, further rose to four last week and included one case of typhus in Glasgow and one case of plague belonging to Leith. The two deaths from scarlet fever were both recorded in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 126, 121, and 132 in the three preceding weeks, declined again last week to 108, but were 18 in excess of the number in the corresponding period of last year. The causes of 20, or more than 3 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 23·4, 21·9, and 22·0 per 1000 in the three preceding weeks, rose to 23·7 per 1000 during the week ending May 13th. During the past four weeks the death-rate has averaged 22·8 per 1000, the rates during the same period being 15·0 in London and

17·7 in Edinburgh. The 172 deaths of persons belonging to Dublin registered during the week under notice were 12 in excess of the number in the preceding week, and included eight which were referred to the principal infectious diseases, against 12, eight, and eight in the three preceding weeks; of these, four resulted from measles, three from diarrhœa, and one from "fever," but not any from small-pox, scarlet fever, diphtheria, or whooping-cough. These eight deaths were equal to an annual rate of 1·1 per 1000, the death-rates last week from the principal infectious diseases being 1·2 in London and 2·3 in Edinburgh. The fatal cases of measles, which had been four, two, and three in the three preceding weeks, rose last week to four. The deaths from diarrhœa, which had been three, three, and one in the three preceding weeks, increased again to three last week. The 172 deaths in Dublin last week included 25 of children under one year of age and 55 of persons aged 60 years and upwards; the deaths of infants were slightly below the number in the preceding week, but those of elderly persons showed a considerable excess. Four inquest cases and four deaths from violence were registered; and 72, or more than two-fifths, of the deaths occurred in public institutions. The causes of three, or nearly 2 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Surgeons: T. W. Myles and C. M. Woods to the *Glory*, for disposal; W. H. Pope to the *Donegal*; E. G. E. O'Leary to the *Sapphire II.*; D. H. Vickery to the *Dryad*; F. J. Gowans to the *Leda*; H. Woods to the *Circe*; E. B. Kenny to the *Hebe*; and J. Shipsey to the *Speedwell*.

ROYAL ARMY MEDICAL CORPS.

According to the May Army Orders amendments are to be made in the King's Regulations in regard to the examination of Majors, R.A.M.C. The following is to be inserted at the end of paragraph 1197:—

Failure in one technical subject will necessitate re-examination in that subject alone; failure in more than one technical subject will entail re-examination in all (to take effect from Jan. 1st, 1906).

The following will be substituted from Jan. 1st, 1906, for Paragraphs 3 and 4 of Appendix VIII.B:—

Technical subjects: 3. Sanitation of towns, camps, transports, and all places likely to be occupied by troops in peace or war; epidemiology and management of epidemics. 4. The laws and customs of war so far as they relate to the care of the sick and wounded.

Paragragh 5 (*c*) is cancelled. The following addition will be made to the list of "books recommended:" "The Laws and Customs of War on Land," edited by Professor T. E. Holland, K.C.

Major G. S. Mansfield has embarked for service in Bermuda. Major J. D. Alexander is appointed to the charge of the Military Hospital, Birr, vice Major H. St. G. S. Hore, who proceeds to Dublin for duty. Major A. A. Sutton, D.S.O., is appointed Senior Medical Officer, Sierra Leone. Colonel R. H. Quill is promoted to Surgeon-General and appointed Principal Medical Officer at Netley. Lieutenant-Colonel O. E. P. Lloyd, V.C., is promoted to Colonel and appointed Administrative Medical Officer at Dover.

Major C. H. Burtchaell, from the Seconded List, to be Major (dated May 3rd, 1905). Lieutenant-Colonel A. H. Burlton retires on retired pay (dated May 17th, 1905).

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Major R. Chalmers to be Surgeon-Lieutenant-Colonel (dated May 2nd, 1905). Surgeon-Lieutenant W. J. Reid to be Surgeon-Captain (dated April 30th, 1905).

THE SIR WILLIAM TAYLOR PRIZE, 1904.

The Sir William Taylor prize of 25 guineas has been awarded to Major W. H. Horrocks, R.A.M.C., in recognition of his distinguished practical and scientific work in connexion with his article on Drain Flushing as contributed to the *Royal Army Medical Corps Journal* in March, 1904, and for his work on the Saprophytic Existence of the Micrococcus Melitensis outside the Body, its Mode of Entrance into the Animal Body and Mode of Leaving the Same, as published in the reports of the Commission for the Investigation of Mediterranean Fever appointed under the supervision of an advisory committee of the Royal Society.

IMPROVED PAY IN THE INDIAN MEDICAL SERVICE.

Certain improvements in the pay of the Indian Medical Service, as specified below, have recently received the sanction of the Secretary of State for India in Council. 1. In the case of military appointments carrying consolidated rates of pay, increases in those rates have been made analogous to the increases in the pay of rank sanctioned in 1903. This does not apply to appointments held by officers in the rank of colonel or surgeon-general, as no increase was made in the pay of those ranks. 2. The pay of the majority of civil appointments has been increased, the increases in this case also being analogous to the recent increases in the pay of rank. The changes that will affect the largest number of officers are as follows: (*a*) The pay of civil and agency surgeons, first and second class, is fixed at Rs.50 a month more, and Rs.50 a month less, respectively, than the pay drawn by officers of the same rank in charge of native regiments. (*b*) Officers in charge of first- and second-class central jails will receive Rs.100 and Rs.50 respectively more than is drawn by officers of the same rank in charge of native regiments. The following new rates may also be mentioned: (*a*) Inspector-General of Civil Hospitals, Bengal, Rs.2500; (*b*) Inspector-General of Civil Hospitals, Punjab and Burma, Rs.2250; and (*c*) Sanitary Commissioners, Rs.1500–60–1800. 3. The military rates of leave pay are revised as follows:—

On first appointment	£250 a year.
After the commencement of the tenth year's service for pension	300 ,,
After the commencement of the fifteenth year's service for pension...	450 ,,
After the commencement of the twentieth year's service for pension	600 ,,
After the commencement of the twenty-fifth year's service for pension	700 ,,

4. The promotion of officers from captain to major is accelerated by six months in the case of officers who fulfil certain specified conditions. 5. The rates of half-pay have been assimilated to those drawn by officers of the Royal Army Medical Corps—viz.:—

Under five years' service	...	...	...	...	...	6s. 0d a day.
After five	,,	,,	...	...	...	8s. 0d. ,,
,, 10	,,	,,	...	...	...	10s. 0d. ,,
,, 15	,,	,,	...	...	...	13s. 6d. ,,

THE NEW MILITARY HOSPITAL AND SCHOOL AT MILLBANK.

It has been announced that under a new scheme about to be introduced the War Office authorities will provide their own specially qualified medical officers and hope thereby to reduce the expenditure on the medical department and to increase its efficiency. This scheme includes the erection of an army medical school at Millbank on a vacant site in close connexion with the newly constructed military hospital there, the building of which has been completed and will shortly be opened. The new Army Medical College will, it is estimated, cost £250,000.

VITAL STATISTICS OF THE FRENCH ARMY FOR THE YEAR 1902.

The vital statistics of the French army for 1902, compiled under the direction of Professor G. H. Lemoine of Val-de-Grâce, have recently been issued from the National Printing Office. In this volume of close on 500 pages, with numerous charts and diagrams, there is to be found, says a writer in the *Archives de Médecine et de Pharmacie Militaires* for last February, not merely a bald compilation of figures but a detailed and authoritative analysis of the varied morbid causes which have exerted an influence on the sanitary condition of the troops. The general sick-rate for the year was 594 per 1000 of strength against 615 per 1000 in 1901. Cases treated in the "infirmaries" are included in this rate as well as those which are admitted into the regular hospitals. The chief sources of disability were as follows, per 1000 of strength: affections of the respiratory organs, 65·8; sore-throat, 57·9; influenza, 25·3; mumps, 17·1; articular rheumatism, 17·0; measles, 12·0; tuberculosis, 7·3; and typhoid fever, 3·8. In Algeria paludal affections head the list with 70·3 per 1000 admissions, while the rate for typhoid fever rises to 17·8 per 1000, or nearly five times that of the home army. The diagram that shows the mortality-rate is a striking one. In 1880 the death-rate for the home army was 9·46 per 1000, but ever since it has gone down steadily till in 1902 it was no more than 4·24 per 1000. Including the troops that are stationed in Algeria the general death-rate

for the year 1881 was 11·98 per 1000, but by 1901 it had gone down to 5·37 per 1000, while in 1902 it was only 4·80 per 1000. But if the death-rate has fallen the invaliding-rate and the sick furlough-rate have both risen considerably. In 1902 the number of permanent invalids was at the rate of 19·1 per 1000 of strength, while no fewer than 10,312 more weakly recruits were sent to their homes temporarily for reasons of health.

THE WAR IN THE FAR EAST.

There is an interesting article in the *Century Magazine* for the present month by Anita Newcomb M'Gee, M.D., under the heading of "How the Japanese Save Lives," which has probably been already read by many medical officers, and, in any case, is well worthy of their attention. Its author acted as supervisor of nurses at the base at Hiroshima, while on the hospital ships, and at the hospitals on the Yalu river, and is therefore able to speak with some authority from special knowledge and personal observation and experience acquired at the seat of war. Dr. M'Gee, in addition to having a good deal to say about the surgery of the war and its results and other points, dwells particularly upon the relative freedom of the Japanese from typhoid fever:—

> Typhoid has been almost eliminated from the Japanese army in the present war. In the three months following the battle of the Yalu (May, June, July) General Kuroki's army had only 83 cases of typhoid. There were only 193 cases reported in General Oku's army from its landing in Manchuria on May 6th to the end of the following January. Of the many thousands of patients treated at the great base hospital of Hiroshima, Japan, prior to the end of September, there were only 50 deaths of men who had typhoid, and a large proportion of these deaths were actually due to beri-beri, wounds, or other complications. Contributory to these results are undoubtedly the facts of the great attention paid to sanitation, of the daily consumption by every soldier of several pills of germ-destroying creosote, and of the isolation of every case of typhoid, which is treated as a contagious disease.

There is no reason to doubt the substantial accuracy of these figures and the Japanese medical authorities may well be congratulated on their sanitary successes in this war. It rarely happens, however, that facts work themselves out in this world, and especially in war, after the unerring and unconditioned fashion of a multiplication table. We have, in order to get similarly successful results, not only to follow but to understand the reason of the methods adopted. This in the case of typhoid fever presupposes a knowledge not only of the disease-producing germ but from a prophylactic standpoint of the favouring conditions and fitting soil necessary for its development. The subject is one which lends itself to much legitimate speculation in the present and to further inquiry in the future and the reader is referred to our remarks thereon in another column.

One of the most disabling diseases to which the Japanese are liable is beri-beri. Professor Ward, speaking last week at the Royal Institution on Fungi, said there was a mould which was called "lurking fungi" and generally attacked grain. It was his belief that beri-beri was caused solely by a "lurking fungus" in the rice. This was a very serious thing to eastern nations, especially to an army in the field like that of the Japanese now in Manchuria. He was now awaiting specimens of affected rice from the East for the purpose of proving his suspicions.

As to the progress of the war in the Far East there is no news of any importance to be recorded either from Manchuria or as regards the naval situation. Our knowledge in respect of the latter is altogether so scanty as only to lead to futile speculation. We know neither the position nor the strength of Admiral Togo's fleet and almost as little about that of the Russians. But we may be sure that a good deal of "hard thinking" is being done both sides in preparing for coming deeds both by sea and land.

The general meeting of the Russian Red Cross Society was held on May 7th, when the report of the executive committee was read. After acknowledging the munificent assistance rendered by the various branches of the Imperial family and the nobility and the handsome aid contributed by Germany, France, Bulgaria, &c., the report states that the general total of income from all sources dating from Feb. 9th, 1904, has been 28,840,093 roubles, which with the addition of the reserve capital of the society as at Feb. 9th, 1904, namely, 5,527,183 roubles, makes a grand total of over 32,000,000 roubles—say £3,200,000 in round figures—and this does not include the maintenance of some of the establishments, such as the Finnish and Jewish hospitals, and others mentioned above. It is estimated that the expenditure for the balance of the year from Feb. 9th, 1905, will be about 20,000,000 roubles, and the *Sviet* rather holds out the prospect of the society having to appeal to the State Treasury for assistance, for it is notorious, according to some of the most responsible papers, that the subscriptions are not so generous now as they were in the early stages of the war.

It is expected that the King will shortly visit Aldershot and that His Majesty will in that case be asked to unveil a memorial which has been erected at Gun Hill, near the Cambridge Hospital, to the members of the Royal Army Medical Corps who fell in South Africa.

Correspondence.

"Audi alteram partem."

SIR THOMAS BROWNE MEMORIAL STATUE.

To the Editors of THE LANCET.

SIRS,—The statue of Sir Thomas Browne which is being executed by Mr. Henry Pegram, A.R.A., is now well advanced and it is intended that it shall be erected and unveiled in its position in the Haymarket, Norwich, on Oct. 19th of this year, that being the tercentenary of Sir Thomas Browne's birth. The greater part of the cost of the statue has been already subscribed but a further sum of about £100 is still required. The committee therefore venture to send this appeal, trusting that former subscribers will now, after the lapse of such considerable time, kindly assist them by giving a small additional contribution.

Donations will be gladly received by the acting honorary secretary, King-street House, Norwich, or at the bank of Messrs. Barclay and Co., Limited, Norwich.

We are, Sirs, yours faithfully,

PETER EADE, M.D. Lond., Chairman.
W. T. BENSLY, LL.D., } Honorary
CHAS. WILLIAMS, F.R.C.S. Edin., } Secretaries.
FREDERIC R. EATON, Acting Honorary Secretary.

Norwich, May 15th, 1905.

THE AERIAL CONVECTION OF SMALL-POX.

To the Editors of THE LANCET.

SIRS,—I notice that your report of my remarks at the Epidemiological Society's discussion on the aerial convection of small-pox makes me suggest that Dr. G. S. Buchanan in his paper suppressed all evidence on the other side of the question. I cannot believe that I suggested anything of the kind nor can I think that the majority of the audience understood me in that sense. Dr. Buchanan's allusion to the negative case of Manchester is quite sufficient to clear him of any such charge. I still think that his paper makes by far the strongest case for aerial convection of any yet published. I certainly may have suggested that cases where hospital influence is evident are much more likely to come under the notice of Local Government Board officials than cases where it is not so, but even if I made such a suggestion, that does not imply that facts are "suppressed." I should be much obliged if you would kindly publish this disclaimer.

May I add that, like Dr. A. Newsholme, my attitude on the aerial question is merely that of an agnostic. The object of my remarks was rather to suggest that the Local Government Board recommendations are unnecessarily stringent and in some cases positively vexatious.

I am, Sirs, yours faithfully,

CLAUDE B. KER, M.D. Edin.,
Medical Superintendent of the Edinburgh City Hospital.

Edinburgh, May 14th, 1905.

THE PROPHYLACTIC INJECTION OF DIPHTHERIA ANTITOXIN.

To the Editors of THE LANCET.

SIRS,—In an annotation under the above heading in THE LANCET of May 13th (p. 1285) the satisfactory results recorded in two recent German papers are described. Such records will, no doubt, be of great service in encouraging

others to employ protective injections against diphtheria more frequently and with undoubted benefit to their patients. I should, however, like to point out that, although the results as regards the patient may in most instances be satisfactory, there is a danger in private practice that unless the injections are combined with systematic bacteriological examination the immunised patient may possibly act as a source of infection for others, although apparently free from disease himself.

In the autumn of 1903 I examined a "swab" taken from the throat of a woman who had been attending a fatal case of diphtheria and had received a prophylactic dose of antitoxin about a fortnight previously. It yielded a typical culture of virulent diphtheria bacilli. The patient had herself been free from symptoms but three children with whom she had come into intimate contact had developed the disease. From the throat of each of them I obtained diphtheria bacilli. It is, of course, possible that there is no connexion between the two sets of cases and that the woman instead of being a "carrier," as appeared probable, was herself infected at the later date. Such an experience suggests, however, that it is advisable to take precautions and to combine the prophylactic use of diphtheria antitoxin with routine bacteriological examination until it can be proved that such injections not only protect the recipients but also the community at large.—I am, Sirs, yours faithfully,

Beaumont-street, W., May 15th, 1905. P. J. CAMMIDGE.

TETANUS AND CHLORAL HYDRATE.

To the Editors of THE LANCET.

SIRS,—In the interesting paper by Mr. J. Maberly on the above subject in THE LANCET of May 6th, the writer mentions that he is not aware of any records of such large doses being given without adverse symptoms. It may interest him, therefore, to know that in 1874 Oré[1] injected chloral hydrate in a case of tetanus with successful results. Two intravenous injections of nine grammes each (a total of about 270 grains) were given within a short interval and the dose was repeated on the two following days. The patient passed into a profound state of anæsthesia and eventually recovered. Mr. Maberly's patient received 240 grains within 11 hours, half per os and half per rectum. Other cases are on record but they were not so favourable as Oré's original one. Cruveilhier's[2] patient died during the anæsthesia, after receiving 29 grammes (435 grains) in five days. Abbé's[3] patient became cyanosed after one injection of ten grammes (150 grains) and after consciousness was restored died in tetanic spasms. Oré[4] subsequently used chloral hydrate intravenously as a general anæsthetic, from five to ten grammes (from 75 to 150 grains) producing an anæsthesia of about half-an-hour's duration. In all about from 30 to 40 cases are on record but the dangers of the method were eventually found far to outweigh its usefulness.

I am, Sirs, yours faithfully,

J. M. FORTESCUE-BRICKDALE, M.A., M.D. Oxon.

Clifton, May 13th, 1905.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Hollymoor Asylum.

THE Rubery-hill Asylum annexe at Hollymoor was opened on May 6th by the Lord Mayor of Birmingham in the presence of a large assembly. It occupies a site of 120 acres a short distance from the existing asylum at Rubery. It comprises patients' blocks and administrative buildings, a spacious dining and recreation hall, engine and boiler houses, laundry, bakehouse, and workshops, homes for attendants, nurses, and servants, with dining and recreation rooms. There is an attractive Gothic church in the grounds, also an isolation hospital, with the necessary administrative department. As the asylum is to be treated as an annexe of the Rubery-hill Asylum no residence has been built for the medical superintendent but accommodation has been provided between the male and female sides for three assistant medical officers. Lodges have been erected at two entrances and detached residences have been built for the engineer, the head attendant, the gardener, and eight married attendants. The building will be capable ultimately of providing accommodation for 1000 patients but blocks have only at present been erected for 604 patients. Provision for all emergencies has been made. Two rooms at the west end of the church have been provided for patients who may have an epileptic seizure during service. In each bedroom is a telephone and in the door is a window through which the attendant can readily keep a patient under complete observation. Two large tanks capable of holding 29,500 gallons of water are especially kept in reserve for fire extinguishing purposes. The bedrooms are lighted from an electric light in the corridor so arranged that the light shines through a window above the door. The heating of the establishment is by means of low-pressure hot water pipes and radiators heated by steam calorifiers placed in the subways. The hot water supply is heated in high-pressure steam calorifiers placed in the basement of the water tower and is driven by means of pumps to the several draw-off taps. Monotony in colour scheme and decoration has been avoided as much as possible. Reading, music, and games can be indulged in and at one end of the recreation hall there is an ample stage for dramatic performances. Altogether the building is what is claimed for it—a model of its kind.

The Ingleby Lectures.

Departing from the usual custom, the Ingleby lectures were not delivered on a technical subject this year but on a subject of general interest—viz., feeble-mindedness. The lecturer was Dr. James Kerr, the advisory medical officer to the Education Committee of the London County Council. Many of the lay public who are known to be interested in social and educational matters were invited and each lecture was attended by a large and interested audience. Dr. Kerr, after paying a tribute to the memory of the founder of the lectureship, considered the definition of feeble-mindedness and the classification of the various types. He believed that the study of the mentally defective by trained experts using all the methods of psychology, physiology, and clinical medicine would be most useful and be likely to throw much light on normal brain action and development. In his concluding lecture he emphasised the importance of detecting cases of feeble-mindedness in the schools and spoke of the part which heredity, alcoholism, and phthisis played in the production of the condition. For all imbeciles and for most of the feeble-minded he advocated sterilisation at an early age.

The Birmingham Lying-in Charity.

The committee of the Lying-in Charity has issued an appeal for £8000 wherewith to build a nursing home for the training of midwives. £5000 have already been subscribed and the site has been purchased. At the home beds will be provided for certain special cases and arrangements will be made for giving the necessary instruction and enabling it to become recognised as a training centre by the Central Midwives Board. With the exception of the Birmingham workhouse infirmary, where a few midwives are trained, there is no recognised school in the district, and as it is estimated that 10,000 births are managed by midwives in the city each year it is obvious that something must be done to supply the want.

Birmingham Baths and Parks Committee.

At the last meeting of the above committee some interesting figures were given by the superintendent. Last year 621,628 persons were admitted to the baths, an increase of 104,699 bathers compared with the previous year and an increase of 208,630 when compared with 1903. No less than 89 cricket clubs have been registered to play cricket in the principal parks of the city. It is most reassuring at a time when much is said of physical degeneration to hear of so general an indulgence in healthy exercise.

Birmingham, Tame, and Rea District Drainage Board.

A very satisfactory state of affairs was disclosed at the quarterly meeting of the above board. The actual income for last year was £2366 more than was estimated and the actual expenditure was £3870 less than the estimate. In consequence it was decided to make a levy of ¼*d.* per tenement less than last year. The opinion was also expressed that the board had now reached the point when the normal increase of tenements and the amount of money received from them would be sufficient to meet their normal increase in the expenditure. The board further decided to do less farming in the future and to adhere more

[1] Comptes Rendus Académie des Sciences, 1874, pp. 515 and 651.
[2] Gazette des Hôpitaux, No. 49, p. 386, 1874.
[3] Société de Chirurgie de Paris, Series iii., vol. iii., p. 173, 1874.
[4] Le Chloral et la Médication Intraveneuse, Paris, 1877.

rigidly to the proper work of the board—viz., the disposal of sewage. Incidentally it was said that the small townships round Birmingham should be very grateful that they have not to deal with their own sewage and that Birmingham undertakes the disposal of it for them, thereby saving them very considerable expense. This drew forth the remark from one member of the board that they were grateful.

May 16th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Mr. Joseph Chamberlain, M.P., and the Liverpool School of Tropical Medicine: The late Dr. J. E. Dutton.

AT the recent festival dinner of the London School of Tropical Medicine Mr. Joseph Chamberlain made a flattering allusion to the liberality of Liverpool citizens in the cause of tropical diseases. He remarked on the boundless interest he took in the noble work of research carried on in tropical climates and asked, "Why could not London, the metropolis of the empire, the metropolis of the world's commerce, emulate more frequently the generosity of the provincial city of Liverpool? The committee asked for a sum of £100,000, which was a trifle compared with the Liverpool subscription." Mr. Chamberlain has always taken a deep interest in the numerous expeditions despatched to the tropics by the Liverpool School of Tropical Medicine and has visited that school on more than one occasion. The following letter of condolence has been received by the Liverpool School of Tropical Medicine from Mr. Chamberlain:—

DEAR SIR,—I deeply regret to learn of the death of Dr. Dutton, in the course of his mission to West Africa, where he was giving his great abilities for the benefit of humanity, and especially of all those whose duties or interests call them into tropical regions. He has died a martyr to the cause to which he had devoted himself and must have his place with the great army of men who in many different professions and occupations have fallen victims on the way leading to the future welfare and prosperity of the great dominions of the King. I beg that you will kindly transmit the assurance of my deepest sympathy with the members of his family. I am, yours faithfully,

A. H. Milne, Esq. J. CHAMBERLAIN.

The Under-Secretary of State for the Colonies also wrote saying that Mr. Lyttelton desired to express his deep sympathy with Dr. Dutton's relatives and his sense of the loss which the Liverpool School of Tropical Medicine has sustained by the premature death of so able and devoted an investigator.

Is Lead Poisoning an Accident?

In the Court of Appeal last week the defendants in the case of Steel v. Cammell, Laird, and Co. appealed against an award of the judge of the Birkenhead county court, sitting as arbitrator under the Workmen's Compensation Act. It appeared that the plaintiff was a caulker in the employ of the defendants. In the course of his work he used both red and white lead and the evidence showed that as the result of constant working with these substances his system became saturated with them. This set up lead poisoning with its usual results, which totally incapacitated him. The county-court judge held that this was an accident in the meaning of the Act and awarded the plaintiff compensation. Mr. C. A. Russell, K.C., for the appellants, argued that it was not an accident within the meaning of the statute. The injuries in this case were merely the outcome of a process acting injuriously on the system. What was contemplated by the Act was an accident the date of which could be fixed, something which could be pointed to as having happened or occurred at a definite time. The Master of the Rolls, in giving judgment, said that under the Act an accident was something of the date of which notice must be, and could be, given. Here, if there had been an accident, it was quite impossible to point to it and he had come to the conclusion that in the circumstances which had happened here the lesions could not be described as due to an "accident." The Lords Justices concurred and the appeal was allowed with costs. It was intimated that the case would probably be taken to the House of Lords.

The Liverpool Corporation and the Supervision of Stables.

The health committee is to be congratulated upon having secured Parliamentary powers to supervise the sanitary condition of stables. Only corporation officials are aware of the wretched quarters in which some horses are housed. With the new powers obtained the health authority will be able to insist upon the cleanliness and proper ventilation of stables and sufficient cubic space being allotted to each animal. Liverpool has frequently taken the lead in sanitary progress and this is another instance of its alertness. The Liverpool Sanitary Act of 1846 may be regarded as the pioneer of the Public Health Act.

May 16th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Llandaff and Dinas Powis.

THE rural district of Llandaff and Dinas Powis, which almost surrounds Cardiff and completely surrounds Barry on the land side of these two towns, has a population approaching 25,000. Dr. Richard Prichard (the medical officer of health) in his annual report states that the birth-rate in 1904 was 29·9 per 1000, which is about equal to the rate which has been recorded during the previous ten years and is only a little below the Cardiff birth-rate, where, however, there has been a steady fall in the past decade. The death-rate in the rural districts during 1904 was 13·8 per 1000, though it is not quite apparent from Dr. Prichard's report whether any account has been taken of the deaths occurring in the county asylum. A temporary isolation hospital had been in use during the last four years and the district council has now decided to erect permanent buildings at Ely. They will be about 200 yards from the Poor-law homes belonging to the Cardiff guardians. They will include an administration block, two pavilions with two six-bed wards in each, and a room for convalescent patients over the nurses' central duty room, an observation block, laundry, and disinfecting buildings, and a lodge with which discharging rooms will be connected.

Health Report for Cardiff.

In his quarterly report Dr. Edward Walford (the medical officer of health of Cardiff) states that during the first quarter of the year five cases of small-pox occurred in the borough. Four cases were connected together and one patient was infected in Yorkshire. During April two other cases were notified. All the patients were treated in the small-pox hospital. Up to the end of March 96 midwives in Cardiff had received certificates and regulations of the Central Midwives Board, 83 as being in practice one year previously to the passing of the Act and 13 on the ground of holding certificates from recognised certifying bodies.

Small-pox in Somerset.

Several cases of small-pox have occurred among the navvies employed in the construction of the new main line of the Great Western Railway from Langport to Castle Cary. The village of Charlton Mackrell where the men were working, has a population of about 500 persons and is within the area of the Langport rural district, the council of which has made no provision for isolating cases of infectious disease, although the medical officer of health, Mr. A. R. Nicholls, has more than once pointed out the desirability of establishing a hospital among a population of 13,000 persons.

Treatment of the Unemployed.

Whenever boards of guardians meet in conference there is one question which they never omit to discuss. It is that which relates to the treatment of tramps and the unemployed. At the discussion upon this subject which took place at Llandrindod on May 10th there was considerable difference of opinion among the delegates from South Wales and Monmouthshire boards, not only as to the cause of the large increase in the number of tramps in all parts of the country but also as to the best method of dealing with the problem which this increase has created. Trade unions, strikes, lack of technical training, intemperance, and ignorance of cooking were severally given as causes and the popular remedy of labour colonies was advocated. One speaker suggested that a genuine working man who had resided in one town for 12 months should be furnished with a certificate by the local authority and upon presenting his credentials to the relieving officer of another district he should be given 1*s.* to enable him to obtain food and lodging away from the tramp wards.

A Crematorium for Newport.

The corporation of Newport (Mon.) has approved of the principle of providing a crematorium which, it is suggested, should be placed in the public cemetery adjoining the Nonconformist chapel. The cost is estimated at £3000. At

present Birmingham is the nearest town to which bodies can be sent for cremation.

Workmen's Houses at Aberavon.

During the past five or six years pressure has from time to time been brought upon the Aberavon corporation by the leaders of the workmen living in the town to erect dwellings for the working classes. Aberavon is a small working-class town situated on Swansea bay and contained at the last census 1478 tenements, of which 477 had less than five rooms. If it is assumed that a house is overcrowded when the number of inmates exceeds double the number of rooms in the house there was in 1901 overcrowding in about 9 per cent. of these five-roomed tenements compared with 6 per cent. in Cardiff, 7 per cent. in Margam (which adjoins Aberavon), 11 per cent. in the Rhondda, and 15 per cent. in Merthyr Tydfil. In January last the Aberavon council decided to embark upon a scheme for the erection of 24 houses at an estimated cost for each house of £156, though the cost of land and other charges would bring this amount up to £233. The suggested rental is 5*s.* 6*d.* or 6*s.* weekly. Each house is to contain three bedrooms and there is to be a fixed bath in each scullery. One of the bedrooms measures only six and a half feet by seven and a half feet and the engineering inspector of the Local Government Board, who held an inquiry into the question on May 9th, protested against the provision of so small a room, intimating that the Board would require a rearrangement of the plans in this particular. The rates in Aberavon are now 8*s.* 3*d.* in the £ and have been more than 8*s.* in the £ for several years past.

The Bath "Oliver" Biscuits.

Most people who know Bath have eaten some of the far-famed "Oliver" biscuits. The *Bristol Times and Mirror* of May 13th gives an interesting account of how the name was derived and says that "Dr. Oliver practised in Bath for 40 years. He was a Fellow of the Royal Society but his title to immortality rests upon his invention of the biscuit. He was for 21 years physician of the Mineral Water Hospital and resigned the post in 1761." It is said that he gave the receipt for making the biscuits to his coachman, a man named Atkins, who took a small shop, set up as a baker of the biscuits, and made a fortune. The sale of the biscuits is now so great at home and abroad that a large factory has become necessary.

May 16th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Bubonic Plague in Leith.

ON the evening of May 12th it became known to the public that bubonic plague had appeared in Leith. A man engaged as a labourer on the streets of Leith had died and his widow and two children were ill, it was believed, of the same disease. The man and his family lived near the docks, but he was not engaged in the loading or unloading of vessels. His wife, it appears, worked at a rag store. The case was finally accepted as one of plague after being investigated by Dr. A. K. Chalmers, medical officer of health of Glasgow, and by Dr. R. MacNeil Buchanan, municipal bacteriologist, Glasgow. Both these gentlemen had experience of the outbreak in Glasgow some years ago. No other fatal cases have occurred and no further suspicious cases of illness have been reported. There is no evidence available as to the source of the infection. It does not appear that there is ground for suspecting the rag store as being the source and no rats have so far been caught with any signs of being infected. The public health authorities and their energetic and able medical officer, Dr. W. Robertson, are taking every possible precaution to prevent its spread. On May 16th the Local Government Board for Scotland received a medical certificate officially establishing (1) that, with the exception of the death of the first case of plague—viz., John Hughes, who died in the isolation hospital, East Pilton, on May 11th, 1905—no death from, or fresh case of, plague has occurred within the five days following the isolation, on May 10th, of Mrs. Hughes, being the last case of plague that has occurred; (2) that all measures of disinfection have been carried out; and (3) that measures have been taken against rats. The Local Government Board accordingly, in terms of the International Sanitary Convention of Paris of 1903, has intimated that the port and burgh of Leith will now cease to be regarded as infected with plague.

A Medical Man Elected to the Edinburgh Town Council.

On May 12th Dr. R. Robertson was elected to represent St. Bernard's Ward on the Edinburgh town council in succession to Mr. Lang Todd, whose untimely death deprived Edinburgh of the convener of its public health committee. Dr. Robertson, who defeated a lawyer, stood as a non-political candidate. If he turns out as good a councillor as Dr. G. M. Cullen the profession in Edinburgh will be satisfied.

Glasgow University Council.

When the report of the committee on finance was submitted at a recent meeting of the University Council attention was called to a somewhat important trend in the University finances. The figures given covered nine years and it was gratifying to notice that the income was about £10,000 per annum larger than at the beginning of that period. That sum was almost entirely derived from payments by students whose numbers had increased within the last seven years from 1836 to 2219, or 20 per cent. But more than the whole of the income had gone in meeting the growing demands. During the last two years the University accounts showed deficits due largely to increased cost of maintenance. The increase of expenditure in the last nine years amounted to £9646, of which £5529 was due to increased cost of maintenance. When they considered the new buildings in course of erection they could imagine the enormous increase of cost which must fall upon the University. One of the most clamant needs of the University was some fund that would enable it to meet these growing demands.

Public Health of Aberdeen County.

Dr. J. P. Watt, medical officer of the county of Aberdeen, has issued his report on the health and sanitary condition of the county for the past year. Scarcity of water was experienced in the Bieldside portion of the special district for a considerable time last summer. To meet this an additional supply was got from Bailieswells and two other springs. This addition has proved ample. It has been resolved to construct a reservoir with a capacity of 300,000 gallons to conserve the original or high-service supply. The site of this reservoir has not yet been precisely determined but it is intended to carry out the work this year. Although the springs were abnormally low the supply to the village of Culter was sufficient. The mains throughout the district have been divided into sections by means of valves, so that when a burst takes place or a connexion has to be made the particular section of main can be emptied without cutting off the supply over the whole district as hitherto. This improvement has also been introduced in the Cults water system. The drains have been in much better condition than they were in former years. They have been more frequently flushed and sludge has not been allowed to settle in the pipes. Scavenging has been carried out in a very thorough manner and has greatly improved the condition of the village. In Waterton district, owing to the scarcity of water in the upper parts of the special district, the district committee decided to carry the seven-inch service main up to the reservoir at a cost of £500. This work is now being executed. At the pumping station of the Waterton and Dyce supply, Parkhill, in consequence of the low state of the water power during part of the year, it was found necessary to put down an oil engine as a supplementary power to the turbines. This has proved satisfactory. The scavenging continues to be well carried out. With very few exceptions the privy middens have now been replaced by water-closets. Drainage systems were laid down in Park, Kirkton of Skene, and Balmedie villages by the respective proprietors in the course of the year—an important sanitary improvement. 98 cases of insanitary dwellings, including croft and cottar houses and sleeping places for farm servants, were dealt with in the various districts during the year. During the past year some progress has been made in reference to the pollution of the Don. As mentioned in the last report, the mill owners and the district committee, without prejudice to their rights and pleas, concurred in asking Mr. Curphey (who had previously reported to the Secretary for Scotland on the matter) to advise what, if anything, was necessary to prevent pollution and to render the effluent from the mills innocuous before being discharged into the river. Following on Mr. Curphey's report, the mill

owners informed the district committee that they were to carry out his recommendations. The district committee understands that considerable progress has been made by the mill owners but for several reasons it is not expected that the purification works will be completed till next summer. Progress, however, has been made, and the district committee, when the works have been completed, looks forward to a considerable improvement in the condition of the river. The sewage disposal scheme for the Waterton special district is still under the consideration of the district committee. A complaint has been lodged by the Fishery Board as to the pollution of the river from various sources. The county council has the matter under consideration. The number of cases of infectious diseases notified for the year was 537. This is the lowest by about 150 cases since 1898, the year in which the Notification Act came into force, within the county as a whole. Of the 537 cases, 241 were cases of scarlet fever, 93 of diphtheria, 68 of enteric fever, 123 of erysipelas, 2 of puerperal fever, and 1 of measles. The birth-rate was 27·008 per 1000, as compared with 25·828 for 1903. The death-rate was 12·538 per 1000, that of the previous year being 13·084.

May 16th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Tuberculosis in Ireland.

ACCORDING to the Registrar-General's report published on May 3rd there were registered during the week in the metropolitan area 31 deaths from tuberculosis, of which 17 were attributable to pulmonary tuberculosis. It is the usual unpleasant story. While the mortality from this disease has fallen in England it has increased in this country and the fact is not surprising since in Ireland there are but two small institutions which even pretend to deal with the fringe of the evil—the sanatorium at Rostrevor and another at Newcastle. The county councils generally devote their energies to things political or trivial, but at a meeting of the general council of the county councils on April 28th, presided over by Sir Thomas Esmonde, Bart., M.P., a new departure was made. Mr. Thomas Power proposed the following motion which was carried unanimously:—

That in view of the ravages which consumption is making amongst our population it is eminently desirable that steps should be immediately taken to arrest the progress of this dire disease and we recommend to the earnest consideration of the several county and district councils the need which exists in each province for the foundation of properly equipped sanatoria and trust that this all-important subject will engage their immediate attention.

Something practical may be the result of this resolution for, of course, the county councils have the power to strike a rate and to obtain the necessary money.

Maryborough District Asylum.

The Maryborough asylum committee at its recent monthly meeting accepted the resignation of Mr. Joseph H. Hatchell, who has been resident medical superintendent for over 37 years. He receives the maximum allowance of £533 6*s.* 8*d.* The salary for his successor has been fixed at £300, with allowances valued at £150.

Irish Medical Association.

The annual general meeting of the Belfast and District branch of the Irish Medical Association was held in the Medical Institute, Belfast, on May 10th, when Professor J. W. Byers was elected president for the ensuing year. With reference to the much debated report of Surgeon-General Evatt upon the question of the dispensary medical officers the secretary read a letter from the central authorities of the association in Dublin to the effect that copies would be sent on application to all members of the association but were to be regarded as confidential. The following motion, after a full discussion, was proposed by Dr. D. P. Gaussen, seconded by Dr. J. C. Ferguson, and carried unanimously:—

That this branch of the Irish Medical Association is of opinion that the Direct Representative for Ireland on the General Medical Council should, if possible, be chosen from the ranks of the provincial practitioners.

It was moved by Professor J. A. Lindsay, seconded by Dr. A. G. Robb, and carried unanimously:—

That this branch disapproves of the appearance and general arrangement of the new Irish Medical Directory and requests the council of the association to reconsider these matters in arranging for the issue of the next volume.

The Royal University of Ireland.

On May 10th a meeting of convocation of the Royal University of Ireland was held in Dublin for the election of six members to represent the graduates on the Senate, the choice falling upon Judge Shaw, who received 382 votes; Professor Anderson, President of Queen's College, Galway, 365; Dr. John Walton Browne, 364; Dr. R. W. Leslie, 340; Professor Leitch, D.Lit., 335; and Mr. Edward Cuming, 316.

Ulster Medical Society.

A special meeting of this society was held in the Belfast Medical Institute on May 11th, the President, Dr. W. Calwell, being in the chair. There was a very large attendance. Dr. V. G. L. Fielden read a paper entitled "The Pharmacology and Therapeutics of Ice" and Dr. J. S. Darling (Lurgan) showed two cases of Actinomycosis, with microscopic preparations to illustrate the growth. At 9 o'clock the subject for which the meeting was specially summoned was considered—viz., the Direct Representative for Ireland on the General Medical Council, when the following motion, proposed by Dr. C. E. Shaw and seconded by Dr. Darling, was carried unanimously:—

That this meeting is of opinion that the medical practitioners of Ireland should be represented on the General Medical Council by a provincial practitioner and with a view to attaining this we support the candidature of Dr. Leonard Kidd.

The Royal Medical Benevolent Society.

At a meeting of the Belfast branch of the Royal Medical Benevolent Society held in the Medical Institute, Belfast, on May 12th, it was reported that £144 had been subscribed during the year. Since 1901 there has been an annual falling off in subscriptions and 75 out of the 200 Belfast medical practitioners did not subscribe. Dr. Joseph Nelson was re-elected president and Dr. R. Purdon honorary secretary and treasurer.

The Direct Representative for Ireland on the General Medical Council.

In addition to Sir William Thomson and Dr. L. Kidd a third candidate, Dr. R. B. Mahon of Ballinrobe, co. Mayo, has appeared. He is put forward by the members of the County Mayo branch of the Irish Medical Association on the ground that it is intolerable that the Poor-law medical men should be any longer unrepresented on the General Medical Council. In a circular issued by the County Mayo branch it is said that "the meeting [of the branch held in Claremorris on April 27th] considered that while the thanks of the Poor-law medical men of Ireland are due to Sir William Thomson for his efforts on their behalf, so many portals exist for his admission to the General Medical Council that it is unlikely that body will be for long without his assistance in the event of his non-election as Direct Representative." It is also stated that in the event of any other Poor-law candidate coming forward a preliminary poll should be arranged to decide who goes to the final poll. It is clear that the coming contest for Direct Representative for Ireland on the General Medical Council will resolve itself into the issue of the provinces *versus* Dublin and that the medical men outside the metropolis will favour the claims of a general practitioner and preferably one who is in thorough sympathy with the grievances of the Poor-law medical officers.

May 16th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Trypanosomiasis in a White Man.

AT the meeting of the Academy of Medicine held on April 25th M. Laveran referred to a case of trypanosomiasis in a white man. He reminded his hearers that sleeping sickness was only one of the many forms of trypanosomiasis so frequently met with in equatorial Africa and that early observers had thought that it was peculiar to the black races but that of late years, since white men had penetrated in greater numbers into those regions, several cases had occurred in Europeans. The case to which he referred was one reported by M. Martin and M. Girard and the patient was a French missionary, aged 38 years, who contracted the disease in the French Congo. He went there in 1891 and returned to France shortly after the commencement of his disease in 1904. The illness began with marked asthenia, anæmia, and general weakness but there was very slight

fever. He also suffered from an intensely itchy papular eruption which could not be assigned to any parasite. He was sleepy and dull and had subsultus tendinum. A blood count showed eosinophilia 12 per cent. and trypanosomata were found in the blood. The remainder of his system (*appareils*) was normal but the blood and the cerebro-spinal fluid were contagious by inoculation in the rat and the guinea-pig. At the end of some months the patient died; nightmare and delirium were present but there was neither coma nor lethargy. This is interesting in view of the fact that the only pathogenic agent found was the trypanosoma Gambiense, contrary to the opinion of Manson who holds that sleeping sickness is a bacterial disease and only supervenes as a complication of trypanosomiasis. It would seem that sleepiness, coma, and lethargy correspond pretty accurately to three degrees of alteration of the brain tissue in patients suffering from trypanosomiasis and that if the last two are wanting in the white man it is because he is more sensitive than the black man to the infection of the trypanosoma.

Spontaneous Gangrene of the Leg in Popliteal Aneurysm.

At a recent meeting of the Society of Surgery M. Arrou communicated an account of a case which showed that when gangrene followed on an operation for extirpation of a popliteal aneurysm it was not always just to blame the operation. M. Arrou said that every popliteal aneurysm should be operated on and that one should never be afraid of operating lest gangrene should supervene, for gangrene might occur in such cases without any operation. He mentioned the case of a woman, aged 50 years, who came to consult him for a small tumour in the popliteal space. M. Arrou finding that it was an aneurysm recommended operation but the patient refused. One month later she returned with gangrene of the whole of the leg which necessitated amputation through the middle third of the thigh. The operation was performed without the loss of one drop of arterial blood and the femoral artery was completely blocked with a hard dry clot. For prudential reasons a ligature was placed on this vessel but this was the only ligature used. What was still more astonishing was that the wound healed by first intention and that there was not the least sloughing of the flaps.

The Influence of Children's Dispensaries on Infantile Mortality.

At the eleventh session of the Obstetrical Society of France M. Mocquot stated that sound directions as to suckling or bottle-feeding (*allaitement*) children did not only serve to diminish the frequency of gastro-intestinal affections but had an influence upon other maladies so that they tended to diminish in both number and gravity. M. Budin gave some figures as to infantile mortality in various regions of France and in other countries. They showed a lowering of infantile mortality in towns where there existed children's dispensaries (*consultations des nourissons*). In Paris, for example, although the temperature was higher and remained higher for a longer period in 1904 than in the two preceding years, infantile mortality underwent a marked diminution. The same thing was even more marked in smaller towns, but such a state of affairs by no means obtained in towns where these dispensaries did not exist.

Radiotherapy in the Treatment of Eczema.

At the meeting of the Academy of Medicine held on April 25th Dr. Leredde read a note upon the usefulness of radiotherapy in eczema, even in those forms which affect the skin deeply. In one case in which the face was affected the disease had lasted 15 months; in another the disease, which had commenced in the hands some two years previously, had spread to the face and to the thighs. In both patients all treatment had failed. After several sittings of radiotherapy a cure was obtained and had already lasted for four months. In a third case the relief was only temporary. Dr. Leredde said that radiotherapy seemed to offer a means of treatment of great value for grave cases of eczema, especially those which for one reason or another were pronounced incurable.

The International Tuberculosis Congress.

From Oct. 2nd to 7th next a grand International Congress against Tuberculosis will be held in Paris. The opening session will be held at the Grand Palais, the honorary presidents being M. Casimir-Périer and M. Léon Bourgeois, while the President of the Republic is patron. A sum of 100,000 francs has been voted by the Chambers. The nature of the researches to be undertaken, the scope of the publications, and the official receptions which will be offered to those attending the Congress all justify the effort which the State and the whole body of French men of science are going to make. The Congress will not confine itself to the medical aspects of tuberculosis but will also discuss the social side of the question and will make an appeal for the coöperation of all classes of society in the fight against the disease. 25 local committees outside Paris have been already constituted and 33 foreign countries have organised national committees. In connection with the Congress will be held an exhibition illustrative of the anatomy and bacteriology of tuberculosis, together with statistical documents and literature concerning methods of prophylaxis and the like. There will also be a commercial and industrial section. The exhibition will be open to the public throughout the month of October.

May 16th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Cerebro-spinal Meningitis.

CEREBRO-SPINAL meningitis is now extremely prevalent in Upper Silesia. This disease, which had nearly disappeared for about 30 years, has spread through several districts of that province and cases have made their appearance sporadically in various parts of Germany. There is, therefore, some uneasiness among the public caused especially by the reports of the lay press, so that even in Berlin and its neighbourhood, where about ten cases may have occurred, patients suffering from a chill or rheumatic pains in the muscles of the neck are likely to imagine that they have caught cerebro-spinal meningitis. In Silesia up to the present time 1955 cases have been notified and of these patients about 50 per cent. have died. As in former epidemics, it has been observed that the disease is not so contagious as some others and that school children who are especially liable to catch measles and scarlet fever are not exceptionally susceptible to cerebro-spinal meningitis. Energetic measures have been taken to check the spread of the disease and ample hospital accommodation has been provided. Unfortunately the inhabitants of Upper Silesia are accustomed to a low standard of living and pay little attention to hygienic principles. The district is, moreover, a mining centre and very overcrowded, most of the people being Poles.

The Roentgen Congress.

Immediately after Easter no less than three medical congresses were held in Berlin. The Congress of the German Surgical Association met as usual from Wednesday to Saturday after Easter, being preceded by the recently founded Congress on Orthopædic Surgery which assembled on the Tuesday. In the following week—namely, from April 30th to May 3rd—a Roentgen Congress on radiography took place. Professor Roentgen, the honorary President, was expected to be present but did not appear, the reason being, as was generally supposed, his disinclination to be a prominent figure at a public meeting. After the inaugural address, delivered by the Vice-President, Professor Eberlein of the Berlin Veterinary College (the President, Professor von Bergmann, being absent in Italy for his health), and the addresses of welcome on behalf of the various official authorities and medical societies, the proceedings began with general reports on the importance of the Roentgen rays in the different branches of medicine and surgery. Professor von Leyden first spoke on radiography in internal medicine, especially in diseases of the nervous system. He said that by radiography it was possible to examine the vertebral column and in this way useful information might be obtained in diseases of the spine. Professor Grunmach explained the methods of radiographical examination in diseases of the internal organs, especially of the heart and the lungs. Professor Hoffa spoke on the advances in orthopædic surgery attained by the aid of radiography. He made especial reference to congenital dislocation of the hip-joint, to scoliosis, and to spondylitis, in which an exact diagnosis was made early by radiography. Professor Lenhartz and Dr. Kisorling communicated a paper on the Diagnosis of Gangrene of the Lungs by Radiography. They said that this method enabled surgical operations to be performed with greater security because the situation and the extent of

the gangrene could be ascertained. By surgical operation the mortality of this disease has been reduced from 90 to 65 per cent. The application of the Roentgen rays for curative purposes was the subject discussed at the last meeting. Professor Lassar of Berlin spoke on the cure of superficial cancroids by the rays. He said that in the early days of radiography the exposures were often too long and "burns" of the skin were the consequence. It was now possible to avoid these drawbacks and to use the rays not only as a means of diagnosis but as a powerful remedy. This has especially become evident in the treatment of cancroid, where the success of radiography could not any longer be denied. Superficial cancroids might heal after a few exposures and relapses might be similarly treated with a good result. On microscopical examination a destruction of the cancer cells was found to occur after the irradiation. It must, however, always be kept in mind that the effect of the rays did not exceed one centimetre of depth so that the deeper layers were not influenced. Radiographical treatment was also useful in cases where a relapse had occurred after an operation. In these cases it was possible by the application of the rays to bring about healing of the ulcerated spots and to relieve pain, although there was no means by which relapsing malignant growths could be made to disappear. In the discussion Dr. Colley expressed the opinion that by the alleged success of Roentgen treatment of superficial cancer the public might be led to believe that irradiation ought to be tried first in every case of cancer and in this way the right moment for an operation might be missed. Dr. Unger of Berlin said that not only the successful but also the unsuccessful cases ought to be published. He mentioned some cases where under the Roentgen treatment the growth had extended into the deeper layers of the tissue. Dr. Strebel of Munich discussed the therapeutic effect of cathode rays. He said that the cathode rays produced very severe dermatitis which might last for several months but finally healed. The energy of the cathode rays exceeded that of the Roentgen rays and even that of radium. They were especially suited for the treatment of lupus, cancroid, and telangeiectasis. It was especially remarkable that the cathode rays might be introduced into the cavities of the body, so that diseases of the rectum and of the uterus might eventually be treated by this method. Apart from the medical meetings a day of the Congress was devoted to the technical side of radiography, when improvements in the apparatus, &c., were demonstrated. International uniformity in the technical terms to be used in radiography was recommended. The result of the Congress was finally the foundation of a German Roentgen Association.

May 16th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Open Spaces round Vienna.

AT a recent meeting the municipal council adopted a scheme which will have an important effect in promoting the salubrity of the atmosphere of the city. The intention is to surround Vienna with a belt consisting of a continuous series of gardens, recreation grounds, woods, and meadows, which will be formed at the joint expense of the city and the empire. This belt will have a breadth of about one kilometre and a length of 40 kilometres, thus providing an area of not much less than 20 square miles, on which no building will be allowed to stand. Part of the belt exists already in the south and east of the town but the necessity of completing it has become apparent through the erection of the new hospital.

The Street Ambulance Corps.

The Street Ambulance Corps has just opened a new station in proximity to the western suburbs. The central station being situated on the south of the city the ambulance vehicles had to make a journey of several miles in order to reach some of the outlying districts, so that the western station will be a decided acquisition. It contains accommodation for five carriages, with stabling for the horses, and besides the necessary rooms for the medical officers there are a small operating theatre for minor surgery, a sterilisation room, and a library. An electric motor-car, specially designed for the use of the ambulance corps and fitted with all requisites for first aid and for the conveyance of patients to hospital, has been provided. The officers of the corps deliver lectures on first aid, chiefly for the instruction of the police force but also for the benefit of the working classes. The corps is under private management and was founded in consequence of that fearful disaster the burning of the Metropolitan Theatre 20 years ago, when 800 people perished from want of an organised institution of this kind.

Treatment of Hypertrophy of the Prostate by the X Rays.

At the last meeting of the Vienna Medical Society Dr. Moszkowicz showed several cases of Enlargement of the Prostate in which he had tried a new method of treatment. As the enlargement was due to the hypertrophy of the glandular tissue chiefly, and as this tissue was easily influenced by the x rays, he directed the rays of a "soft" tube through the rectum towards the gland. Of three men who were shown the first was 66 years old, and after three exposures, each lasting 15 minutes, he was able to pass urine spontaneously. The second patient was 77 years old and his prostate was enormously enlarged and very hard. The same treatment was adopted and now he can pass urine freely but some of it is still retained. The third patient was completely cured. Two of them had severe hæmorrhagic cystitis and one had epididymitis after 17 days. It was difficult to say whether these complications were the effects of the rays. As regards the technique a rectal speculum was used and the surrounding parts were covered by lead. Dr. Moszkowicz intended in the future to use bromide of radium which might be applied by means of an ordinary catheter and could be directed exactly towards that part of the gland which compressed the urethra.

University of Vienna.

In this University the summer semester begins on May 1st, and quite a number of interesting lectures will be delivered in the different wards and institutions. The fees for these courses vary between 25 and 100 kronen (between £1 1*s.* and £4 4*s.*). Several lectures will be delivered in English, if a sufficient audience preferring that language present themselves, otherwise they would naturally be delivered in German. Surgical courses, with special reference to atypical operations, and courses on the surgery of the uropoietic system, of the ear, and the nasal accessory sinuses, will be conducted by a number of eminent specialists, such as Professor Zuckerkandl, Professor Urbantschitsch, and Professor Pollitzer. Professor Nothnagel and Professor Neusser will lecture on medicine and several professors, including Dr. Chiari, will lecture on laryngology. Bacteriology, serum therapeutics, and hygiene are well provided for in the new Pasteur Institute of Vienna. Operations on the eye, gynæcological operations, and obstetrics can be learned very conveniently as the clinical material at the disposal of the respective clinics amounts to several thousand patients yearly. The summer term lasts only till the middle of July and therefore it is advisable to come to Vienna in the winter semester, when the time available for study is over five months—namely, from the middle of October to the end of March and when the clinical material is greater. But the summer is at least pleasanter for theoretical courses, such as those on histology and physiology.

May 15th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The Abolition of the Cigarette in Indiana.

THE legislature of Indiana has recently enacted a law making it a misdemeanour to sell cigarettes and punishing those who have them, or the paper used in rolling them, in their possession. This high-handed procedure on the part of the Indiana law-makers has been variously received in different parts of America. Some journals applaud the action as one taken in the interest of the public health, while others brand it as the act of prejudiced monomaniacs. The *New York Times* takes the latter view and explains editorially that cigarette smoking is probably the least harmful form of that habit. The opinion is expressed that the Indiana cigarette law is an outrage in its invasion of personal liberty and its interference with legitimate trade. The question of the harmfulness of cigarette smoking has been threshed out in a fairly thorough manner in THE LANCET on several occasions. The general conclusions arrived at were that cigarette smoking, *per se*, was no more injurious than the use of tobacco in pipe or cigar. Cigarette smoking in

the case of the young was condemned and the practice of inhaling the smoke of cigarettes was deprecated.

The Report of the Department of Health of the Isthmian Canal Commission for December, 1904.

In sending this report, Colonel W. C. Gorgas, chief sanitary officer of the Canal zone, states as his opinion that a gratifying condition of affairs is shown all along the line. This has been especially the case with regard to the destruction of anopheles mosquitoes. During December, 1904, 512 water-barrels were covered, leaving about 1000 more to be covered to finish the work. Mosquito oil has been placed as often as necessary on drains, pools, and ditches, and the work of fumigation has been carried on in an extensive manner. The total number of cases of yellow fever occurring in Panama since the arrival upon the isthmus of the canal employés in June, 1904, has been 13, of which number three died. Beri-beri is somewhat prevalent in Panama but of course by far the most frequent affection is malarial fever. Practically 50 per cent. of all the natives of the Canal zone are infected with malaria and thus, says the report, all that is necessary for new arrivals to contract malaria is the presence of the anopheles. This mosquito is being destroyed and the natives are being cinchonised to reduce the foci of infection. The total *personnel* of the sanitary department of the Isthmian Canal is 746.

Hospital Fund in New York.

$76,000 (£15,300) have just been distributed among the various hospitals of New York city. The distributing committee of the New York Hospital Saturday Association made the apportionment. The hospitals which received the largest amounts, the apportionment being based on the free work performed by the various institutions during the past year, were as follows: Montefiore Hospital, Mount Sinai Hospital, St Luke's Hospital, German Hospital, Roosevelt Hospital, and the Post-Graduate Hospital. The sums awarded ranged between £1530 and £30.

Cerebro-spinal Meningitis.

The board of health of New York has decided to class cerebro-spinal meningitis among the contagious diseases and to take similar precautionary measures to prevent its spread as are used with scarlet fever. The board of health does not absolutely state that cerebro-spinal meningitis is contagious but has taken into consideration the fact that the localities in which the disease is most prevalent are situated in crowded centres of population. Even if cerebro-spinal meningitis be not contagious, general sanitation and other precautionary measures will tend to check the disease and will act favourably from the standpoint of prevention. At a meeting of the New York Academy of Medicine held on April 19th Dr. George L. Peabody read a paper on the Treatment of Cerebro-spinal Meningitis with Injections of Diphtheria Antitoxin. The speaker stated that diphtheria antitoxin had been used in all the hospitals of New York and vicinity but had failed to produce favourable results. Dr. Peabody said that a few patients appeared to be benefited by the treatment at first but the serum failed ultimately. Referring to the death-rate under the influence of the present epidemic, Dr. Peabody showed that the mortality figures for New York have exhibited an increase of 20 per cent. over those of last year.

May 10th.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Dufferin Association.

THE Dufferin Association for Supplying Medical Aid to the Women of India has just issued its annual report which shows that steady progress continues to be made. The number of patients treated at the numerous hospitals and dispensaries of the association is very large and a considerable number of women enter annually the various colleges and schools engaged in training medical practitioners of all grades. Chiefs of native States frequently apply for the assistance of lady doctors, and on the other hand the association encourages the erection of hospitals for women in the native States. The Nizam of Hyderabad has given six scholarships for students attending the medical school in Hyderabad. The association as a whole, including the Victoria Memorial Scholarship Fund of about Rs. 7 lakhs, possesses an investment of about Rs. 33½ lakhs.

Questionable Methods of Medical Practice by Missionaries.

An important article in an Anglo-Indian contemporary calls attention to a revival of superstitious methods which some of the medical missionaries in India appear to have adopted. Demoniacal possession would seem to be possible with these worthy people and they have actually asked that particulars of any such cases should be sent for publication. It is necessary to remind those medical missionaries who have taken up this mediæval attitude that they will lose public confidence in their scientific attainments as the public of to-day interpret disease as due to physical causes and realise the necessity of adopting physical means for combating it. The last issue of the *Quarterly Journal of the Medical Mission in India* may be referred to.

Complaints of Hospital Administration in Bombay.

Arising out of some individual complaints against one of the hospitals in Bombay the large question of the general administration of these hospitals has been freely discussed. One leading paper boldly declares that for some time past St. George's Hospital and its administration have not enjoyed the full confidence of the European community. With such a feeling existent every trivial complaint is likely to be magnified. At the same time it is the duty of the Government to insure that the national hospital possesses the complete approbation of the British community. Another complaint made against several of the hospitals is that the line is not drawn with sufficient clearness between hospital patients and private patients. Some of the hospital patients are asked to pay fees and it is apparently not for the benefit of the hospitals that these fees are asked for. It is but fair to say that some members of the staffs of the hospitals do not countenance this practice. To allow fees to be paid or to take patients out of their turn because they pay fees is of course altogether wrong in principle. Hospitals in India as in other places should not be used by the members of staffs for their private advantage. It is urged that no physician or surgeon attached to the great hospitals of Bombay should be allowed private practice except as a consultant. It is here where the anomaly comes in. In India the members of hospital staffs are general practitioners and in such cases there is a great temptation to utilise hospital patients for increasing private practice. To make any change in the direction suggested would necessitate the Government increasing greatly the pay of those officers who are now privileged to be attached to civil hospitals as the private practices allowed constitute some of the best plums of the service.

The Plague Mortality.

The plague mortality throughout India continues enormously high. Over 50,000 deaths were returned for the week ending April 15th. There has been a great increase in the Punjab which recorded 29,212 cases and 23,942 deaths, as against 22,122 deaths for the previous seven days. The United Provinces had 15,884 deaths and Bengal 6022, as against 17,939 and 7434 respectively in the preceding week. Burma records 155 deaths. At Rangoon the disease has increased considerably where since the outbreak there have been 750 cases with 633 deaths.

April 29th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Outbreak of Dengue Fever.

A SEVERE epidemic of dengue fever has occurred in Queensland. It began in Brisbane where more than one-third of the entire population of the city was affected. Theatres had to be closed and every institution, tramways, railways, and mercantile offices, had their business operations interfered with owing to the epidemic. From Brisbane it spread to Ipswich, Toowoomba, Gladstone, Maryborough, Mackay, and Townsville, in Queensland. The hospitals are crowded and have to refuse admission to all but the most severe cases. Cases have been found in Sydney and Newcastle in New South Wales, two cases at Melbourne, and one case at Hobart. All came from Queensland and were promptly isolated. The disease has been epidemic in Queensland before but has never established itself in the southern and colder States.

Bubonic Plague.

Fresh cases of bubonic plague have occurred at Brisbane

and Newcastle and a patient at the Colmslie Hospital, Queensland, has died from the disease.

Health of Sydney.

The city health officer of Sydney (Dr. W. G. Armstrong) has presented his annual report for the year 1904. The death-rate, 12·06 per 1000 of estimated population, was the lowest recorded in the city for the last seven years. The salient point of the year's death statistics was the remarkable decrease in the number of deaths from diarrhœal disease, which fell from 205 in 1903 to 107 in 1904. Of 371 samples of milk purchased and analysed 298 were proved to be genuine, while 73, or 19 per cent., were adulterated, and only 4 per cent. contained preservatives. In 1901, of the milk samples examined 70 per cent. were found to be adulterated in some way and 44 per cent. contained preservatives. During the year the council had adopted a code of by-laws for the compulsory notification of pulmonary consumption as a first step towards the prevention of the disease.

Health of School Children.

A deputation recently waited on the Minister for Public Instruction in New South Wales to request that the department would adopt a system of medical inspection of school children. It was suggested that the children should be medically examined before being admitted to the schools and that periodical examinations should also be made. It was stated that 25 per cent. of school children were unfit to attend owing to tuberculosis and other diseases or defective sight or hearing. At the ragged schools 25 out of 60 children examined were seriously ailing. The Minister, in giving a sympathetic reply, said that he would ask the British Medical Association whether it would assist the department in discovering to what extent the children in the schools were unfit to be there, and if the medical men in the State would assist, the inquiries would be carried out as quickly as possible. He especially wanted to know whether any of the defects could be remedied by alterations in the lighting and ventilation of the school buildings.—In Melbourne the Lord Mayor recently made a tour of inspection of the State schools in the municipality and was moved by what he observed to express condemnation of the ventilation of some of the class rooms. Mr. Tate, the Director of Education in Victoria, said that the Lord Mayor had only called attention to what the director had stated for years, but those who had the spending of the money regarded him as a faddist. The Premier, however, had set aside £10,000 for remedying defects in State school buildings. The department was also considering a scheme for investigating the sight of school children and avoiding undue eye-strain.

Hospital Affairs.

The annual meeting of the subscribers to the Royal Prince Alfred Hospital, Sydney, was held on April 3rd. The chairman, in moving the adoption of the report, stated that the number of in-patients treated was 3287, an increase of 127 on the number for last year and the highest for many years. The number discharged cured was the greatest in the history of the hospital. The finances were satisfactory and there was a small balance—£26—on the right side. Until further funds were available the new pavilions could not be opened. —The Lady Mayoress of Sydney recently convened a meeting to consider the best means of raising the sum of £15,000 to complete the new buildings of the Royal Alexandra Hospital for Children. The total cost of the portion being erected was to be £35,000, of which £20,000 have been contributed.—At a largely attended meeting held in Hobart it was decided to establish a sanatorium for consumptive patients.

Dental Curriculum at the University of Sydney.

This year the University of Sydney has established a dental curriculum and the degree of Bachelor of Dental Surgery. The entrance examination is identical with that for medicine and science. The duration of the curriculum is four years. The practical work is done at the Amalgamated Dental Hospital and University Dental Hospital, the amended conditions of amalgamation having been agreed upon to date from June 1st next.

Death under Chloroform.

At an inquiry by the city coroner of Melbourne into the cause of death of a patient to whom chloroform had been administered it appeared from the evidence that the anæsthetic was given during labour and the patient suddenly collapsed. The medical man in attendance had given the chloroform without calling in another practitioner. The coroner referred to the advisability of having two medical men present at the administration of chloroform.

Personal Items.

Dr. T. W. Sinclair of Melbourne has been appointed assistant health officer in the Department of Public Health, Sydney. Dr. Sinclair had a distinguished course at Melbourne University and Hospital; he then visited Europe, and has chiefly devoted himself to bacteriology.—Dr. A. E. Newbury Browne of Maitland, New South Wales, has been appointed chief medical officer of New Guinea. He has practised in tropical countries and has travelled much in the East.—Dr. Harvey Sutton of Melbourne has been chosen by the selection committee as the Rhodes scholar for Victoria for 1905. He had a distinguished career at the University of Melbourne and is resident medical officer at the Children's Hospital. He holds a record in athletics for the best mile and half mile amateur and is also a noted cricketer and footballer.

Charge of Manslaughter against a Medical Man.

Dr. Frederick W. Marshall of Sydney was again charged with manslaughter at the Sydney Criminal Court, and for the second time the jury were unable to agree and were discharged. The medical evidence was the same as at the previous trial, that the cause of death was a perforation of the uterus made within 48 hours of death. The prisoner was remanded to the next sitting of the Criminal Court and allowed bail.

Obituary.

A very old practitioner died at Wagga, New South Wales, on March 6th in the person of Mr. Erasmus Wren. He was born in England in 1815 and thus lived in the reigns of five sovereigns. He graduated in 1837 and came to Tasmania under engagement to the Imperial Government. Thence he went to Deniliquin, New South Wales, where he practised in partnership with the late Dr. Noyes till 1874. Then he went to Wagga. He was for many years Government medical officer in the Wagga district and president of the Riverine Club.—Dr. James Brown Crabbe of Chatswood died on March 4th after a lingering illness. He was born in Scotland in 1850. After graduating at Edinburgh he came to Australia in 1875 and settled in the Clarence River district. In 1889 he removed to Chatswood. He took an active interest in the public life of the community, was an alderman, and president of the local bowling club. Personally he was of a genial, charitable nature and was greatly respected.—Dr. A. W. Nash of Newcastle, New South Wales, died on March 23rd from blood poisoning contracted in the practice of his profession, being accidentally infected while performing an operation on a hospital patient. He was only 43 years of age and was universally popular, being a true sportsman as well as an able practitioner.

April 10th.

Medical News.

UNIVERSITY OF CAMBRIDGE.—At the third examination for medical and surgical degrees, Easter Term, the following candidates were successful:—

Part II. Surgery, Midwifery, and Medicine.—S. Barradell-Smith, B.A., St. John's; F. M. Bulley, M.A., Emmanuel; H. C. Cameron, B.A., St. John's; R. J. Cardew, B.A., Clare; D. V. Cow, B.A., Trinity; S. H. Daukes, B.A., Caius; H. S. Dickson, B.A., Christ's; C. E. Droop, B.A., Trinity; T. W. N. Dunn, B.A., Caius; W. G. P. Ellis, M.A., Catharine; T. J. Faulder, B.A., Clare; N. Corbet Fletcher, B.A., Queen's; R. E. French, B.A., King's; J. R. C. Greenlees, B.A., St. John's; G. Holroyd, B.A., Christ's; W. R. Honeyburne, B.A., Peterhouse; W. G. Howarth, B.A., King's; F. A. Juler, B.A., Trinity; E. Lloyd, B.A., Emmanuel; J. A. A. Oriebar, Magdalene; W. E. Paramore, B.A., St. John's; and P. R. Parkinson, B.A., Caius.

The First, Second, and Third (Part I.) Examinations for M.B. and B.C. will begin on Monday, June 12th. Names of candidates are to be sent to the Registrary by May 25th and certificates and fees forwarded by June 7th. A grace for the affiliation of the University of Queen's College, Kingston, Ontario, will be offered to the Senate on May 25th.

MARY WARDELL CONVALESCENT HOME.—The Lord Mayor will preside at a meeting at the Mansion House on July 13th to commemorate the twenty-first anniversary of the opening of the home by the King and Queen, then Prince and Princess of Wales.

THE MIDWIVES ACT AND THE PAYMENT OF FEES TO MEDICAL MEN.—We have been requested to publish the following resolution of the Islington Medical Society, moved by Dr. Basil G. Morison and seconded by Dr. L. U. Young:—

That we, the members of the Islington Medical Society, are of opinion that immediate arrangements should be made under the Midwives Act in the interest of lying-in women of the poorer but not pauper class for the prompt attendance of a registered medical man in cases of abnormality, and that the payment of such attendance should be made by the metropolitan borough councils or, failing them, by the County Council, with powers of recovery where this is possible.

Signed, on behalf of the meeting,
JAMES GREY GLOVER, Chairman.

UNIVERSITY OF LONDON: FACULTY OF MEDICINE.—A meeting of the Faculty of Medicine will be held at the University of London on Tuesday next, May 23rd, at 5 P.M. An interim report from a special committee appointed to consider the subject of teaching and research in the "advanced subjects" of medical education will be submitted. As a first step towards securing an improvement in the teaching of the "advanced" or clinical subjects of the curriculum—viz., medicine, surgery, midwifery, &c.—the committee recommends the Faculty "to press upon the Senate the desirability of such a modification of the University regulations as will admit of a much longer period being allotted for 'advanced' studies and a proportionate curtailment of the time allotted for the early studies." A second special committee will present a report embodying proposals to secure a definite plan of annual retirement by a proportion of the members of certain boards of studies comprised within the Faculty.

UNIVERSITY OF OXFORD: DEPARTMENT OF OPHTHALMOLOGY.—A post-graduate course on ophthalmology has been arranged from July 3rd to 15th. The main idea of the course is to demonstrate (on actual patients as far as possible) the whole range of ophthalmology, in order to make the reading of a text-book more profitable than can be the case when relying merely on pictures. The first week will be mainly devoted to demonstrating the practical examination of eye patients, the use of the ophthalmoscope, and the work of refraction. During the second week the work will be more specialised. As well as the mere routine cases there will be a large selection of cases of unusual interest for the benefit of those who are more experienced in eye work. The lecturers are the reader in ophthalmology, Mr. R. W. Doyne, Sir William J. Collins, Mr. W. Adams Frost, Mr. E. Nettleship, Mr. Sydney Stephenson, Mr. C. A. Worth, Mr. R. M. Gunn, Dr. S. J. Sharkey, Mr. Priestley Smith, Mr. E. Treacher Collins, and Mr. J. H. Parsons, and Professor William Osler is to be asked to give an address. In addition to the above lecturers several ophthalmic surgeons have undertaken to give clinical demonstrations. The course will be illustrated by the lantern. The fee for the course is five guineas. Gentlemen attending the course will be provided with board and residence in Keble College at the rate of 7*s.* 6*d.* per day. For further particulars application should be made to Mr. Robert W. Doyne, 34, Weymouth-street, London, W. Early application is desirable as the numbers must of necessity be strictly limited.

NATIONAL SANATORIUM FOR CONSUMPTION, BOURNEMOUTH.—The fiftieth annual meeting of the governors of this sanatorium was held on May 11th, the Earl of Eldon presiding. The annual report of the committee of management stated that the extension of the building and alterations and improvements by which 14 beds had been added for patients and better accommodation provided for the nursing staff had cost over £3000, towards which only £2000 had been subscribed. The ordinary income for 1904 had amounted to £2999 and the ordinary expenditure to £3094, but the expenditure had been abnormally low owing to the closing of the sanatorium for four months in consequence of the building extension. The committee was anxious to commemorate the jubilee of the institution by placing it in a sound financial condition and it appealed for new annual subscriptions to meet current expenses and for donations to pay off the total debt of £1500. Nearly 300 patients had been under treatment, a very large proportion of whom had been discharged considerably improved. The meeting deplored the death of Mr. Charles Lavington Pannel, mainly through whose efforts the National Sanatorium was founded and who took an active part in its management until advancing years prevented him. It was resolved that in future donors of £500 should have the right to name a ward, and donors of £100 the right to name a bed, in perpetuity.

HOLIDAY GUIDES.—Guides to Aberystwyth, Bournemouth, Broadstairs, and Southport, well illustrated and containing useful information for intending visitors, can now be obtained free on application to the town clerks of the respective watering places.

By permission of the Worshipful Company of Carpenters an exhibition of the competitive plans and drawings for the new buildings of King's College Hospital at Denmark-hill will be held in the court-room of the Carpenters' Hall, London-wall, E.C., from May 26th to June 1st. The exhibition will be open on May 26th from 12 noon to 5 P.M. and on the five remaining days from 10 A.M. to 5 P.M., except on June 1st, when it will close at 4 P.M. The presentation of a visiting card will admit to the exhibition.

THE HIGHER EDUCATION OF NURSES.—The Board of Trade, having received an application for the registration of an association for the promotion of the training and of the higher education of nurses as a company without the word "limited," invited anyone who objected to the application to state his reasons for objecting in the deputation room of the Board of Trade, 7, Whitehall-gardens, London, on May 5th. The room was filled to overflowing with people who had come to object and many inquiries were made by the ladies present as to whether the promoters of the company were going to speak. The names of these gentlemen were Lord Rothschild, Lord Revelstoke, Mr. H. Cosmo Bonsor, Mr. E. A. Hambro, Mr. C. H. Goschen, Mr. S. Hope, and Mr. C. H. Smith. But to those sitting at the back of the room it was only possible to make out that Mr. H. Cosmo Bonsor was there. The meeting commenced at half past eleven in the morning and did not finish till about two in the afternoon, most of the time being taken up by objectors. The gentleman who represented the Board of Trade very plainly told the meeting that he was there to hear objections to the application of the promoters of the company for the registration of the company without the word "limited." The only person who seemed to address himself to this point was a gentleman who claimed to be the representative of 15 hospitals and as far as could be made out at the end of the room his argument was that to omit the word "limited" would give an authority to the proposed company which it would not secure if it always had to put the word "limited" after its name. Sir James Crichton-Browne, who was understood to appear on behalf of 2800 nurses, said some hard things about the proposed company. He declared that its very constitution was vicious in principle and as for the objects of the company they were simply opposed to all sound policy. Even the promotion of the company was wrong because, according to Sir James Crichton-Browne, it was a gratuitous infringement of the rights of the nurses whom he championed. In short, this new company was inopportune in its inception and would prove injurious to the public and to the whole of the nursing community. Sir J. Crichton-Browne was very caustic in his remarks on the provision made by the suggested company for the registration of nurses and wanted to know in what way the promoters of the company were fitted to be members of a council to which disciplinary powers over nurses were to be granted. Mr. Sydney Holland was much cheered by the nurses present, especially those at the end of the room. He was very severe on the gentlemen who launched this new company and in regard to the regulations for registering nurses he said there was a word in the English language known as "cheek," but apparently he did not wish to apply that term out of respect to Mr. Cosmo Bonsor, who, however, smiled very pleasantly and did not seem to mind at all. Every society connected in any way with nursing seemed to have sent some one to urge an objection. There were ladies who represented matrons' councils and ladies who attended as delegates from working nurses, and there was Mrs. Bedford Fenwick who very solemnly warned the Board of Trade against granting the desired licence to the company. Dr. Bedford Fenwick also spoke and the Vice-President of the Royal College of Surgeons in Ireland said that the proposed society would be mischievous and its government degrading. Sir Victor Horsley said only a very few words but they were listened to with the closest attention. His message from the British Medical Association

was one of absolute hostility to the proposed company and its registration of nurses. He observed that medical men had suffered so much from companies that they could not allow the nurses to be exploited in the same manner without raising the strongest protest against such an iniquity. Sir Victor Horsley also wanted to know how it was that the company had come out with two prospectuses and these two differing in regard to who were the people to manage the registration of nurses and to judge in regard to nurses being struck off the register. Mr. Cosmo Bonsor told the meeting how it was that two prospectuses came out and then proceeded to answer what had been said by Mr. Sydney Holland and others. His answers, however, only evoked further questions and further objections and everyone was apparently glad to get away after the representative of the Board of Trade had poured oil on the troubled waters and promised to report all that had been said to Lord Salisbury.

THE SOCIETY OF ARTS AND THE LONDON INSTITUTION.—In view of the feeling which appears to have been aroused amongst some of the proprietors of the London Institution with regard to the proposed amalgamation with the Society of Arts, and the consequent probable difficulties of effecting a harmonious fusion of the two corporations into a single institution, the council of the Society of Arts has decided not to take any further action in the matter and has discharged the committee which, at the instance of the board of managers of the London Institution, it appointed to consider the scheme for amalgamation.

ROYAL SANITARY INSTITUTE.—The institute dinner was held in the Prince's Restaurant, Piccadilly, London, on May 12th, His Grace the Duke of Northumberland, K.G., the President, being in the chair. There were 108 members and guests present, amongst whom were the Bishop of Hereford; Sir R. Douglas Powell, President of the Royal College of Physicians of London; Sir Henry C. Burdett, K.C.B.; Sir William J. Collins, chairman of the education committee of the London County Council; Sir Arthur W. Rücker, LL.D., F.R.S., Principal of the University of London; Sir George Hare Philipson, LL.D., Principal of the Durham College of Medicine; Sir Alexander Binnie, President of the Institution of Civil Engineers; Sir Shirley Murphy, medical officer of health of the County of London; Director-General Herbert Mackay Ellis, Royal Navy Medical Department; Mr. Augustus C. Scovell, J.P., chairman of the Metropolitan Asylums Board; Mr. Andrew Clark, chairman of the council of the British Medical Association; Dr. J. F. J. Sykes, President of the Incorporated Society of Medical Officers of Health; and Colonel J. Lane Notter, R.A.M.C., chairman of the council of the institute. The Duke of Northumberland, after outlining the work carried on by the institute, said: "With regard to the new buildings, the penalty of so much success is that we grow out of our clothes. The council has decided, therefore, that we must go to the tailor. You know well that we have a valuable museum and library, that we have much work in the way of lecturing and training in sanitary science, in examining those who will submit themselves for examination, and in levelling up the sanitary position of those who have the charge of health throughout the country and I think, and the council thinks also, that the time has come when it is necessary to have more room. You have had a scheme laid before you to acquire a very excellent site in an important part of London where it would be possible for us to erect a building which would meet with our need. We have a certain amount of money towards that—about £10,000—but we want £15,000 more if we are to enter upon it. That is a very serious amount to raise but I cannot help thinking that if each of us does his best to meet the demands of this kind, and if we appeal to all those throughout the country who really appreciate the work that we are doing, it may not be impossible to reach that sum and put the Royal Sanitary Institute in a position locally which shall be worthy of its great achievements." Colonel J. Lane Notter said: "To further develop this great work your council find it necessary to move into larger premises as they are terribly handicapped in Margaret-street for want of room. The proposed site has been circulated to the members but it is not the intention of the council to adopt this or any scheme without taking the members of the institute into their entire confidence and as soon as they are in a position to do so they propose to call a general meeting of the fellows, members, and associates. Much will depend on the present appeal for funds. So far I am happy to say that the proposed scheme appears to appeal to all classes of members and a number of donations have been received from associates, many of them of limited means, but who have promised small annual subscriptions." The Bishop of Hereford said that the homes of the working classes, both in town and country, ought to be far more sanitary. One of his clergymen had told him that in his parish of 4000 there were no less than 120 homes that were not fit for the upbringing of children. Priding themselves as they did upon their imperialism it was high time that they looked to the welfare of these younger members of the empire.

AN AMERICAN CENTENARIAN.—The *Boston Medical and Surgical Journal* of May 4th states that Hiram Cronk, the sole survivor of the war of 1812, who lives at Dunn Brook in Central New York, celebrated his 105th birthday on April 29th and that a number of delegations from patriotic societies visited him on this occasion.

SOCIETY OF ARTS.—Dr. Charles Creighton, author of the "History of Epidemics in Britain," read a paper before the Indian Section of the Society of Arts on May 18th on Plague in India. Dr. Creighton has recently visited India for the purpose of studying the general aspects of plague and his paper, besides dealing with the present situation, referred to the probable course of the infection according to historical precedent.

CHILDREN'S COUNTRY HOLIDAYS FUND.—The annual meeting of this fund (18, Buckingham-street, Strand, W.C.) will be held at 3.30 P.M. on Monday next, May 22nd, in the Hôtel Métropole. The Earl of Erroll will preside. Among the speakers will be the Bishop of Stepney, Mr. Anthony Hope Hawkins, Lord Edmund Talbot, and Miss N. Adler. The Secretary of State for the Colonies, Mr. Lyttelton, who is one of the trustees of the fund, is also expected to be a speaker.

COUNTRY SCHOOLING FOR TOWN CHILDREN.—A movement was started in Manchester some time ago, by the Rev. S. Nugent Perry, for the establishment of a country school "for those Manchester children whose homes are far removed from anything that speaks of rural life." His parish furnishes very few children who would not be included in the above category and though the ignorance of a world outside the wilderness of bricks and mortar to which the child of the slums is accustomed has often something quaint and humorous it is also pathetic. The outcome of the movement culminated recently in the opening of the school at Knoll's Green, near Knutsford, by Sir James Hoy, chairman of the Manchester education committee, on the invitation of Mr. Herbert Philips and a committee of which he is chairman. There is no intention of adding to the permanent charitable societies of Manchester and the school is looked upon as an experiment. The gentlemen present were of various shades of opinion but all joined heartily in this effort to bring out some of the scholars and their teachers from time to time from the town to the country. In an address given by Lord Stanley of Alderley he dissented from the view that there was physical degeneration now among the children and said that the conditions of their existence were much more favourable than before the factory legislation, when "we had child-labour pushed to an extreme." There is happily more interest taken in the conditions of life among our town dwellers than ever before but the recruiting returns, to say nothing of other evidence, show that there still is a good deal of leeway to make up.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Canine League.

ONE of the incidents of the sitting of the House of Commons on May 11th was the presentation of a petition by Mr. ELLIS GRIFFITH and Mr. MACNEILL from members of the Canine League and others against vivisection. The petition bore 180,000 signatures, was two and a quarter miles in length, and weighed over a hundredweight.

HOUSE OF LORDS.

THURSDAY, MAY 11TH.

Public Health Acts (Amendment) Bill.

Lord HYLTON, in moving the second reading of this Bill, explained that its objects were to exempt buildings sufficiently isolated from the

operation of existing and future building by-laws, to render exempted buildings subject to by-laws relating to sanitation, and to empower the Local Government Board, upon representation by ratepayers, to disallow by-laws after confirmation where any such are found unsuited to the district in respect to which they apply or to operate contrary to the public interests. The Bill, he said, had not been instigated by the circumstances of a recent case in which a learned judge was concerned but was printed and privately circulated before that case became public. What was desired was to encourage the provision of good and inexpensive houses by removing some of the restrictions which the building by-laws placed and imposed upon private enterprise.—Lord WOLVERTON, in the absence of Lord Belper, gave the Bill a sympathetic reception on behalf of the Local Government Board on the understanding that it was referred to a select committee, by which it could be carefully considered.—Some criticism from Lord TWEEDMOUTH followed and the Marquis of LANSDOWNE, in reply, admitted that he thought the subject required to be dealt with with very great caution, and although the Government realised that the Bill was well meant it desired to guard itself against its being supposed that all the provisions were accepted. He understood that the object of the promoters was to steer a prudent course between the pretensions of the jerry builder on the one hand and those who might be called pedants in architecture and building construction on the other.—The Bill was then read a second time and referred to a select committee.

HOUSE OF COMMONS.

WEDNESDAY, MAY 10TH.

Nuns as Nurses.

Mr. SLOAN asked the Chief Secretary for Ireland how many nuns were acting as paid nurses in the Ballyshannon union, county Donegal; whether he was aware that one of the nuns who was in charge left off duty on Feb. 14th last and had not returned since; whether she had sent in her resignation, and, if so, on what date; who was the nurse in charge at present; and on what date was she appointed.—Mr. LONG said: Three nuns are employed as paid nurses in the infirmary of the Ballyshannon workhouse. The Local Government Board has no information to show that one of these nuns has vacated her position, either temporarily or permanently. The fever hospital nurse obtained a week's leave of absence at the date mentioned but she is not a nun.

Physical Development in the Army.

Sir THOMAS DEWAR asked the Secretary of State for War whether, with a view to physical development in the army and the temporary reappointment of the inspector of gymnasia, he had yet made any definite appointment to this position; and, if so, whether the curriculum would be arranged in accordance with the most modern methods of instruction.—Mr. ARNOLD-FORSTER said: The reply to the first part of the question is in the negative. As regards the second part of the question the curriculum is, it is believed, arranged in accordance with the most modern methods of instruction.

Typhoid Fever at Lincoln.

Mr. JACOBY asked the President of the Local Government Board whether he intended to send an official to hold an inquiry at Lincoln into the recent serious epidemic of typhoid fever.—Mr. GERALD BALFOUR replied: A medical inspector of the Local Government Board visited Lincoln and investigated the cause of the outbreak referred to. I am not prepared to direct any further official inquiry on the subject.

Health Report of Uig, Lewis.

Mr. WEIR asked the Lord Advocate whether he would state why the report of the medical officer of health of the parish of Uig, Island of Lewis, was not included with the reports of other medical officers in the current report of the county medical officer of health of Ross and Cromarty.—Mr. SCOTT DICKSON said: The report of the medical officer of health of Uig had not been received by the county medical officer of health at the time of his annual report going to press but in any case the publishing of the parish reports in the county reports is a matter within the discretion of the county medical officer.

FRIDAY, MAY 12TH.

The Plague in India.

Sir WALTER FOSTER asked the Secretary of State for India whether he could state the number of deaths from plague in the Punjab for each of the months of January, February, and March of this year; and the total number of deaths in India during each of the same months.—Mr. BRODRICK answered:—

	Punjab.	India.
January	29,009	126,526
February	31,779	126,041
*Four weeks ending 1st April	60,046	199,221

* Compiled from the weekly tabular returns, as the report for the calendar month of March has not yet been received from India.

A Request Refused.

Mr. WALLACE asked the Lord Advocate in regard to Section 55 of the Licensing (Scotland) Act, 1903, whether he would give instructions to the procurators-fiscal that for the purposes of this section any registered medical practitioner was to be regarded as a medical official.—Mr. SCOTT DICKSON said: The answer is in the negative.

Telegraphists and Medical Certificates.

Sir WALTER FOSTER asked the Postmaster-General whether he was aware that a telegraphist, named Bullamore, who was absent from duty at the Central Office from April 12th to May 4th, had had his pay stopped for this period; and whether, seeing that the telegraphist provided medical certificates showing that the absence during the whole of this period was due to illness, he would explain the reason for punishing the telegraphist for obeying the injunctions of his medical advisers, as well as for his decision to set aside the expressed opinions of two medical men.—Lord STANLEY said: Mr. Bullamore has been examined by the chief medical officer of the Post Office as well as by the medical referee to the Treasury and both gentlemen are of opinion that he was, and is, fit for work and that he will not be injured by it. This opinion is not concurred in by the private practitioners whom Mr. Bullamore consulted but I am not prepared to set it aside for that reason. Mr. Bullamore was informed in March last that pay could not be allowed in respect of further sick absences except upon the recommendation of my official medical advisers.

TUESDAY, MAY 16TH.

Visiting Physicians to Irish Lunatic Asylums.

Mr. SLOAN asked the Chief Secretary for Ireland whether, in view of the fact that appointments to the office of visiting physician to Irish lunatic asylums had been abolished, he would explain how the Lord Lieutenant had been able to sanction the appointment of a visiting physician to the Youghal auxiliary asylum.—Mr. LONG said: The appointment of physician was abolished prior to the passing of the Local Government Act, 1898, but Section 84 (1) (b) of this Act empowers asylum committees to appoint an assistant medical officer who is under the control of the resident superintendent. This is the appointment which the Lord Lieutenant sanctioned.

Unqualified Dentists.

Mr. ARTHUR HENDERSON asked the Home Secretary whether his attention had been called to the death of a young woman at Carlisle whilst having teeth extracted by an unregistered dentist; and whether, in view of the frequency of deaths from anæsthetics administered by unqualified dentists, he would consider the advisability of promoting legislation for the protection of the public.—Mr. AKERS-DOUGLAS replied: I have received a report of the facts of this case from the coroner and I shall communicate them to the Privy Council Office for the Lord President's consideration. The propriety of the action of the unregistered dentist in this case may be considered open to question but I do not think that further proceedings are called for. It should be remembered that unregistered practitioners who undertake serious operations resulting in death may be prosecuted for manslaughter.

Reserve of Civilian Surgeons.

Dr. E. C. THOMPSON asked the Secretary of State for War whether it was his intention to form a reserve of civilian surgeons in connexion with the Royal Army Medical Corps in view of the experiences gained in the South African War.—Mr. ARNOLD-FORSTER said: The subject is receiving consideration.

The Sale of Poisons.

Sir THOMAS DEWAR asked the Home Secretary whether his attention had been called to an inquest at the City coroner's court on April 25th last at which the jury unanimously expressed the opinion that it should be made compulsory for all poisons to be sold in bottles of standard shape and easily distinguishable by touch; whether he would introduce legislation this session; and in view of the possibility of early legislation seek the opinion of metropolitan coroners on the subject.—Mr. AKERS-DOUGLAS said: The rider to the verdict of the jury in the case referred to was communicated to me by the coroner. I am sorry that I cannot add anything to the answer which I gave to the honourable Member on March 13th respecting legislation. The matter is under the consideration of the Privy Council Office, which will have full information before it.

SELECT COMMITTEE ON REGISTRATION OF NURSES.

The Select Committee of the House of Commons appointed to consider the expediency of the registration of nurses met again on May 11th and heard further evidence. Mr. H. J. TENNANT, chairman of the committee, presided.

Mrs. BEDFORD FENWICK appeared as a witness in favour of State registration. She said that she had taken a great interest in the organisation of nursing. The consideration of the question of registration compelled their attention to educational standards and she claimed that the education of nurses should be based on sound principles. The great development of medical and surgical science necessitated a rising standard of nursing. The lack of educational standard was at the root of the want of organisation. What they desired was a nursing board which should define the minimum standard to which a woman should attain before she was allowed to describe herself as a trained nurse. She strongly dissented from the opinion of a former witness that the systematic knowledge of principles of nursing would produce pseudo-scientific workers eager to assume the responsibilities of the medical practitioners. Such a suggestion was exceedingly mischievous and was not founded on fact. It was proved that the best nurses were those who held the position of sisters and nurses in the best training schools. There was the very greatest harmony between the medical faculty and the nurses in those hospitals.

The CHAIRMAN: What do you say about the argument of opponents of registration that registration would hall-mark a woman and that once she was hall-marked you would not be able to get her off the register though she might change very much?—She might deteriorate a little. Human beings are not perfect and people grow old in all professions. Women, she continued, who gave evidence during their youth and in the course of systematic training during three or four years that they were good nurses were not likely in a great many cases to deteriorate. It was impossible to say how many trained nurses there were. The only statistics were those of the Registrar-General and in those returns many people were put down as nurses who were not certificated as such. As to the argument that it might be difficult for poor people to secure adequate nursing under a system of registration, she pointed out that the poor had never been so well nursed as they were now. She strongly opposed the suggestion that the central board should register two classes of nurses. The standard should be that of the trained nurse. Two classes would cause confusion in the mind of the public. Nursing homes ought to be registered by the State but not under the Act that would register nurses. That might be done under municipal and local councils and kept entirely separate from the trained nurses. There was considerable scandal in connexion with nursing homes and she was strongly in favour of registering. She saw no difficulty in striking off the register a nurse who had become inefficient or worse than inefficient. Former witnesses asserted that the number of bad nurses was not so great as had been represented. Her own experience led her to believe that the exact opposite was the case. She submitted a statement of 100 cases where women were charged with offences ranging from murder to petty theft. She was sure that registration would avoid many of those scandals. The public had absolutely no protection against those women.

In cross-examination Mrs. FENWICK said that the lack of control and

guarantee was a danger to the public. The supporters of registration said that the training was not satisfactory in so far as there was not a standard and there was not sufficient knowledge. The ignorance of some nurses who came to her for employment in connexion with an association which sent out nurses was appalling. There would be fewer bad nurses if they had a definite standard and if each nurse had to go before an unprejudiced board and show that she knew her business.

Mr. HOBHOUSE pointed out that the 100 cases referred to extended over six years. That represented 14 per year on the census number of 80,000 nurses.

Mrs. FENWICK remarked that there were large numbers of nurses of an immoral character who never came to the police courts at all.

Mr. PIERPOINT said that in this list of 100 cases there was one underlined in black ink and described as a case of enormous importance to the public. The case in question was one of burning a patient by the application of hot-water bottles which were too hot. He would like to know if it required three years' training to teach a person that a hot-water bottle that was too hot for the skin should not be placed against the skin. Would an Act of Parliament prevent a hot-water bottle from being too hot?

Mrs. FENWICK: No, but it would give some protection to the patient. Such a thing would not be done if the nurse were properly trained.

Replying to Sir JOHN STIRLING-MAXWELL, the witness said that a nurse would not be taken off the register unless a definite accusation was made against her.

Would the medical man make the accusation?—A good many would not but a good many would. Medical men have made complaints with regard to the malpractices of midwives.

In the course of a discussion as to whether the statements referring to 100 cases in which nurses were involved should be published with the evidence Mr. PIERPOINT asked the witness if she would take the responsibility for that enormous mass of libel.

Mrs. FENWICK said that every case had been in the public press and she would take the responsibility for what she had put before the committee.

Miss LAURA L. DOCK stated that she had spent eight years in district nursing in various parts of America and she had also travelled. She had never been nursing in this country. She said that the system of permissive registration which had been adopted in the United States was promising well. She agreed, however, that compulsory registration would be better. It was an inducement to the public to employ a nurse if they knew that she was registered and she thought that the same discrimination would soon be exercised in the selection of a nurse as in the selection of a medical practitioner.

The committee adjourned,

The Select Committee met again on Tuesday, May 16th, and heard the evidence of Mr. A. M. Upton, Clerk of the Society of Apothecaries, and Sir James Crichton-Browne.

Replying to the CHAIRMAN (Mr. H. J. TENNANT), Mr. UPTON said he appeared on behalf of the Society of Apothecaries, who considered the registration of nurses to be unnecessary and undesirable. They felt that registration would not assist either the public or the medical men. The general view of the practitioner was that the nurse already held the position she ought to hold and that was the point of view of the society. They were inclined to fear that the tendency of a registered nurse would be to set herself up as the co-equal of the practitioner.

Why do you think the nurse would set herself up in this position of antagonism to, or competition with, the doctor?—The fact that she passes this examination and has this State diploma.

The Witness, continuing, said he did not know how they were going to control the class of nurse that passed the examination. They would not necessarily be women of higher education.

But they would have to be women who had arrived at a minimum qualification of knowledge and passed the period of training laid down by the suggested board?—Of course, that means something. I admit it means more than many nurses have at present.

The society, he continued, felt that it ought to be represented on a central board under a scheme of registration. It was too soon to say whether the Midwives Act had operated successfully. The midwives' practice, of course, was within certain limits. As representing a body of medical men he would say that he retained his hostility to that measure. As to whether registration would be to the advantage of the nurses that question raised the whole principle. The whole idea was to elevate the nursing into a profession like the law, medicine, or the church. He did not think it merited that elevation. Registration might create more culture and more training among nurses and make them a more attentive body of women but the essential in nursing was not so much the knowledge as the manner and personal attributes of the nurse. There was a great deal in a sympathetic nurse.

Replying to Dr. HUTCHINSON, he said he thought that hospitals and asylums and public institutions were able to look after their own nurses and that the public were sufficiently protected by the well-known societies from which they employed nurses.

Answering Mr. DOUGLAS, he said he thought his chief objection to the scheme was that there might be antagonism between doctors and nurses.

Sir JAMES CRICHTON-BROWNE, examined by the CHAIRMAN, stated that he considered the present condition of the nursing world was not very satisfactory and demanded some alteration. Nursing had undergone enormous improvement but there were still a great many inefficient and incompetent nurses. There was a great want of uniformity. Registration would winnow out ignorance and incompetency and afford the public protection. There would be a minimum qualification founded on examination and evidence of moral quality but it would be a minimum and should not prevent nurses from proceeding higher. Hospitals and medical schools, he understood, would still go on issuing their certificates. The minimum examination at the end of three years' training would exclude the incompetent and the untrustworthy nurse. Nurses would not be registered—and they were not registered now by the Royal British Nurses Association—without the most ample testimony as to moral character which would be given by the hospitals and training schools where they had to be trained. He would suggest that the register should be sold at a cheap rate and sent to the public libraries so that anyone would have an opportunity of seeing what the qualifications of any nurse were. There were 2600 nurses registered just now by the Royal British Nurses Association, but of course the registration of all trained nurses would be a large question. He was told by the census returns that there were 80,000 nurses in the country. That number must include all the asylum nurses, numbering 11,000. It would include all probationers who would not, of course, come on the register. It would include a large number of casual or occasional nurses and girls waiting on a sick baby might put themselves down on the census as sick nurses. It was extremely difficult to make a computation. In his own little town of Dumfries they had 20 doctors and the nurses did not total 20. In many villages in Scotland there were no nurses at all. The Medical Register contained 38,000 names of practitioners, of whom 5000 practised abroad and 3000 or 4000 in the army and navy, so that the actual number of medical men practising in the country would not be more than 30,000. A ratio of two nurses to one medical men would be an extreme ratio but that would give 60,000 nurses. He did not think that the Register when first started would include more than 20,000 names. As time went on, however, it would become more and more a matter of routine for nurses to be on the register. The wastage was very large among nurses. He did not think the life of a nurse would be more than 15 years at the outside. There was a heavy "mortality" through marriage. A certain number died and a great number gave up the profession. There would be a wastage of 3000 every year but these figures were very rough. There had been very strong prejudice against registration among the matrons but when the Medical Bill was introduced in 1858 there was the same prejudice on the part of corporations. Bodies that had the whole thing in their own hands did not like their powers taken away. It was now recognised that the Medical Act operated for the protection of the public and that it had exercised an enormous effect on medical education. The Central Board should receive only the certificates of recognised training schools and hospitals and registration should be founded on consideration of the training, teaching, and instruction given to the nurses. No hospital or training school would like to be struck off the recognised list and they would all work up to the standard. Many of them would, of course, go beyond the standard, but the lower ones would work up, so that the standard of teaching throughout the country would be raised. He did not think that registering the schools would have the same effect as registering the nurses and recognising the schools. They must have a central body to control the schools and they must keep their eye on the nurses after they had left the training schools.

It has been suggested that giving a State recognition to nurses would cause them to come into competition with the doctors?—The very opposite. The proper nurse knows the line of demarcation and she has a great sense of responsibility. The result of registration, he continued, would be to raise the status and to provide a better educated class of women with better discipline. He would give power to the Central Board to strike names off the register on proof of culpable negligence or unsuitableness. The original evidence on which registration was granted ought to be privileged and any communication from a practitioner in regard to offences ought to be privileged. It was the duty of the medical man if he saw anything wrong to report it. He would not make communications from the friends of the patient privileged because they might have all sorts of vexatious complaints. If there was anything really seriously wrong a conscientious person would take the risks involved in making a communication. He would leave it to the Central Board to inquire into those cases. Reverting to the improvement that had taken place in nursing in recent years he said that when he first assumed the charge of a large asylum with 150 nurses under his command there were nurses in the wards who could not read the directions on the medicine bottles and had to get the lunatics to help them. Nurses were then drawn from a very humble class. He raised the wages of probationers from £12 to £14 and thereupon a complaint was laid before the committee of management by the ladies in the neighbourhood on the ground that he was taking away all their kitchen maids. Of course, all that was changed. Asylums had a high class of nurses now. The Chartered Nurses' Association, of the committee of which he was a member, was founded to enable nurses to get the full benefit of their own earnings. They had 120 nurses, all registered. They were constantly employed and their average earnings were £90 per annum. They had a very large number of applications but they could not take all the applicants in. Their nurses were all thoroughly experienced and nothing could be more admirable than their services. Large numbers of nurses were anxious to obtain admittance to associations of that kind. After registration nurses would go on practising who were not on the register. All they wanted to do was to have the properly trained nurses properly labeled so that the public would know them. Referring to a class of women who acted under district nurses and who also did domestic work besides nursing, he said that he would be inclined to call them nurse-helps. They were not trained nurses. It would be better if they were labeled nurse-helps and a list of them kept by the Central Board. He did not think that would lead to confusion. Nursing homes or institutions in which diseased people were taken for profit should be registered, but that should be done by the county council in the form of a licence. The Asylum Workers' Association would certainly welcome registration but they would require a separate section of registration.

In reply to Mr. DOUGLAS, he said he proposed that the Central Board should exercise discipline like the Medical Council, subject to the nurses on the register knowing that they were liable to that discipline. He proposed a common examination for all nurses, the examiners being appointed by the Board. It would be a single system with the exception of the mental nurses. The Medico-Psychological Association would appoint examiners for them, subject to the approval of the Central Board. It was essential that there should be uniformity of examination. He did not suggest examination for the other grades, although such women might have a little training.

By Dr. HUTCHINSON: He thought that the weakness of the present system was the want of uniformity and the insufficient protection of the public from incompetent nurses. Training schools were not universally up to the mark.

A large majority of nurses are in public institutions and the public do not want protection from them?—Those institutions and authorities have power to look after their own nurses but many of the hospitals are training schools also and I think the hospitals would be all the better for being under the Central Board. The hospital management, he admitted, was enough to protect patients in the hospital from

the incompetency of nurses. The same remark would apply to district committees and college hospitals and so on. The danger lay in the way nursing institutions were worked and in the way women advertised; those institutions should undoubtedly be under some control. With regard to a nurse's recommendations they had no guarantee that they were correct unless there was a register. Some time ago a woman applied to him. She said that she was a trained mental nurse. He asked what her training consisted of and she told him that her late husband was a policeman. He had had something to do with the cells and that was her sole training.

Answering Sir JOHN STIRLING-MAXWELL, who inquired what steps the Central Board would take in the case of a nurse who grew rusty, he said he would never remove her from the register except for sufficient cause or at her own wish. He would ask a nurse to report herself every two years. The register would give a guarantee that she had been properly trained and that she had not been guilty of any culpable offence. He wished nurses to have their own certificates and private recommendations just as at present. A mere directory would not answer the purposes they had in view. It would ignore the examination.

Sir JOHN TUKE: Why should you institute a second examination for nurses who are found qualified by institutions?—To secure uniformity.

The committee then adjourned.

BOOKS, ETC., RECEIVED.

ADAMS BROS., 59, Moor-lane, E.C.

The Physiological Aspect of Dietary. By A. S. Wauchope-Watson. Price 2s. 6d.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent Garden, W.C.

The Rôle of Modern Dietetics in the Causation of Disease. By J. Sim Wallace, M.D., D.Sc., L.D.S., Hon. Dental Surgeon, West End Hospital for Nervous Diseases and Assistant Dental Surgeon, National Dental Hospital, W. Price 2s. 6d. net.

BLACKIE AND SON, LIMITED, 50, Old Bailey, E.C.

A Book of Bridge. By "Pontifex." Price 5s. net.

FUNK AND WAGNALLS COMPANY, New York and London.

Electro-Diagnosis and Electro-Therapeutics. A Guide for Practitioners and Students. By Dr. Toby Cohn, Nerve Specialist, Berlin. Translated from the Second German Edition and edited by Francis A. Scratchley, M.D., New York. Price not stated.

Physician *versus* Bacteriologist. By Prof. Dr. O. Rosenbach of Berlin. Authorised translation from the German by Dr. Achilles Rose. Price 6s.

Superstition in Medicine. By Prof. Dr. Hugo Magnus. Authorised translation from the German, edited by Dr. Julius L. Salinger, late Assistant Professor of Clinical Medicine, Jefferson Medical College. Price 4s.

GREEN, WILLIAM, AND SONS, Edinburgh.

Chapters in Pathology, being an Outline of Lectures upon Some Points in the Pathology of Elementary Nutritive and Circulatory Derangements. By W. S. Greenfield, M.D., F.R.C.P. Lond. & Edin., Professor of Pathology in the University of Edinburgh, and George Lyon, M.D., M.R.C.P. Edin., Second Assistant in the Department of Pathology in the University of Edinburgh, and Assistant Pathologist to the Edinburgh Royal Infirmary. Price 5s. net.

HEINEMANN, WILLIAM, 21, Bedford-street, W.C.

Physiological Economy in Nutrition, with Special Reference to the Minimal Proteid Requirement of the Healthy Man. An Experimental Study. By Russell H. Chittenden, Ph.D., LL.D., Sc.D., Director of the Sheffield Scientific School of Yale University and Professor of Physiological Chemistry. Price 14s. net.

HIRSCHWALD, AUGUST, Unter den Linden, 68, Berlin, N.W.

Lehrbuch der Inneren Medizin. Für Ärzte und Studierende. Von Dr. med. Georg Klemperer, Universitäts-Professor in Berlin. Erster Band. Price M.15.

JOHN BALE, SONS, AND DANIELSSON, LIMITED, 83-91, Great Titchfield-street, Oxford-street, W.

"Verb. Sap." on Going to West Africa, Northern Nigeria, Southern, and to the Coasts. By Alan Field, F.R.G.S., Colonial Political Service; late the Royal Scots; Ind. Staff Corps, and Bombay Famine Relief Dept., &c. Price 2s. 6d. net.

MITTLER, ERNST SIEGFRIED, UND SOHN, Kochstrasse, 68-71, Berlin.

Veröffentlichen des Deutschen Vereins für Versicherungs-Wissenschaft. Herausgegeben von Dr. phil. et jur. Alfred Manes, General-Sekretär des Vereins. Heft V. (Ausgegeben Mai, 1905). Die Impfklauseln in den Weltpolicen der Lebensversicherungs-Gesellschaften. Von Dr. med. Ludwig Pfeiffer, Geheimer Hof- und Medizinalrat in Weimar. Price not stated.

OLIVER AND BOYD, Edinburgh.

Reports from the Laboratory of the Royal College of Physicians, Edinburgh. Edited by Sir John Batty Tuke, M.D., and D. Noël Paton, M.D. Vol. IX. Price not stated.

SAUNDERS, W. B., AND CO., Philadelphia and London.

A Text-book of Medical Chemistry and Toxicology. By James W. Holland, A.M., M.D., Professor of Medical Chemistry and Toxicology, and Dean, Jefferson Medical College, Philadelphia. Price 15s. net.

The Vermiform Appendix and its Diseases. By Howard A. Kelly, A.B., M.D., Professor of Gynæcology in the Johns Hopkins University, Baltimore, and E. Hurdon, M.D., Assistant in Gynæcology in the Johns Hopkins University, Baltimore. Price 42s. net.

How to Succeed in the Practice of Medicine. By Joseph McDowell Mathews, M.D., LL.D., President of American Medical Association, 1898-9. Price 6s. 6d. net.

A Reference Hand-book for Nurses. By Amanda K. Beck, Graduate of the Illinois Training School for Nurses. Price 5s. net.

Atlas and Epitome of Operative Ophthalmology. By Prof. Dr. O. Haab of Zurich. Authorised translation from the German with Editorial Notes and Additions. Edited by G. E. de Schweinitz, A.M., M.D., Professor of Ophthalmology in the University of Pennsylvania. Price 15s. net.

Diseases of the Blood. By Prof. Dr. P. Ehrlich, Prof. K. von Noorden, Dr. A. Lazarus, and Dr. F. Pinkus. Edited, with Additions, by Alfred Stengel, M.D., Professor of Clinical Medicine in the University of Pennsylvania. Authorised translation from the German, under the editorial supervision of Alfred Stengel, M.D., Professor of Clinical Medicine in the University of Pennsylvania. Price 21s. net.

SMITH, ELDER, AND CO., 15, Waterloo-place, S.W.

In Peace and War. Autobiographical Sketches. By Sir John Furley, Kt., C.B., Author of "Struggles and Experiences of a Neutral Volunteer," &c. Price 10s. 6d. net.

WILEY, JOHN, AND SONS, New York. (CHAPMAN AND HALL, Limited, London.)

Manual of Psychiatry. By J. Rogues de Fursac, M.D., formerly Chief of Clinic at the Medical Faculty of Paris. Authorised translation from the French by A. J. Rosanoff, M.D., Junior Assistant Physician, L.I. State Hospital, Kings Park, N.Y. Edited by Joseph Collins, M.D., Professor of Diseases of the Mind and Nervous System in the New York Post-Graduate Medical School. First edition. First thousand. Price not stated.

WILLIAMS AND NORGATE, 14, Henrietta-street, Covent Garden, W.C.

A System of Practical Surgery. By Prof. E. von Bergmann, M.D., of Berlin, Prof. P. von Bruns, M.D., of Tübingen, and Prof. J. von Mikulicz, M.D., of Breslau. Edited by William T. Bull, M.D., Professor of Surgery, College of Physicians and Surgeons, New York. In five imperial octavo volumes. Sold by subscription only. Price per set: extra cloth, £5 5s.; half leather, marble sides and edges, £7 7s.; half morocco, £8 8s.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

ALFORD, E. FRANK R., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician at the Paddington Green Children's Hospital, W.

ALLEN, JAMES D. C., M.B., C.M. Edin., has been appointed Public Vaccinator and Medical Officer to the Binfield District of the Easthampstead Union.

ANDERSON, JOHN, M.D. Aberd., has been appointed Officer of Health for the East Riding of the Council Shire of Bulla, Victoria, Australia.

BAIRD, JOHN C., M.B., Ch.B. Melb., has been appointed Officer of Health for the Shire of Healesville, Victoria, Australia.

BEAUMONT, W. H., M.B., B.S. Cantab., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Sedbergh District of the county of York.

CROSS, W. FOSTER, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed an additional Non-Resident Anæsthetist at St. Bartholomew's Hospital.

GRAY, WALTER GORDON, L.R.C.P., L.M. Edin., M.R.C.S., has been appointed Medical Officer of Health for the Holsworthy (Devon) Urban District Council.

HARRIS, JOHN, M.D. Aberd., has been appointed Honorary Assistant Physician to the Sydney Hospital, New South Wales, Australia.

LAWSON, T. C., M.R.C.S., L.S.A., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Stokenchurch District of the county of Buckingham.

LOCK, JOHN LEWIS, M.A., M.B., B.C. Cantab., M.R.C.S., L.R.C.P., has been appointed Medical Officer of Health of the Uxbridge Urban District.

MACKNIGHT, CHARLES CRAWFURD, M.B. & Ch.M. Edin., has been appointed Officer of Health for the Shire of Warrnambool, Victoria, Australia.

MANBY, W. E., M.B. Cantab., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Bridport District of the county of Dorset.

SAUNDBY, ROBERT, M.D. Edin., F.R.C.P. Lond., has been appointed Consulting Physician to the West Bromwich District Hospital.

SINCLAIR, THOMAS WALKER, M.D. Melb., has been appointed on probation for six months as Assistant Medical Officer of Health for the Metropolitan Combined Districts, New South Wales, Australia.

SMYTH, E. J., M.D., B.S. Lond., has been appointed Honorary Ophthalmic Surgeon to the Royal Surrey County Hospital, Guildford.

TRENFIELD, GEORGE HENRY, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Almshouses under the management of the trustees of the Bristol Municipal Charities.

WATKINS, W. L., L.K.Q.C.P. Irel., has been appointed Medical Superintendent at Yarra Bend Asylum, Victoria, Australia.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

AUCHTERHOUSE, SIDLAW SANATORIUM.—Medical Superintendent. Salary £250 per annum.

BETHLEM HOSPITAL.—Two Resident House Physicians, unmarried, for six months. Honorarium at rate of £25 per quarter, with board, lodging, and washing.

BIRKENHEAD BOROUGH HOSPITAL.—Junior Resident House Surgeon. Salary £80 and fees.

BODMIN, CORNWALL COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary £135 per annum, rising to £155, with board, lodging, &c.

CANCER HOSPITAL, Fulham-road, S.W.—Assistant House Surgeon for six months, renewable. Salary £70 per annum, with board and residence.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—House Surgeon. Salary at rate of £50 per annum, with board and residence.

CHESTER GENERAL INFIRMARY.—House Physician. Salary £90 per annum, with residence and maintenance.

COVENTRY AND WARWICKSHIRE HOSPITAL.—House Surgeon. Salary £100 per annum, with rooms, board, washing, and attendance.

DUDLEY, THE GUEST HOSPITAL.—Honorary Surgeons.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Physician. Honorarium of £25 at completion of six months' approved service, with board and residence.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—House Physician and House Surgeon. Salary £80 respectively, with board, residence, and washing. Also Assistant House Surgeon. Salary £70, with board, residence, and washing. Also Right Clinical Assistants.

HUDDERSFIELD INFIRMARY.—Junior House Surgeon. Salary £40 per annum, with board, residence, and washing.

LIVERPOOL, DAVID LEWIS NORTHERN HOSPITAL.—House Physician. Salary £60 per annum, with residence and maintenance.

LIVERPOOL, MILL-ROAD INFIRMARY.—Assistant Medical Officer, unmarried. Salary £125 per annum, with board and apartments, &c.

METROPOLITAN ASYLUMS BOARD FEVER AND SMALL-POX HOSPITALS.—Assistant Medical Officers, unmarried. Salary £180 per annum, rising to £240, with board, lodging, attendance, and washing.

METROPOLITAN HOSPITAL, Kingsland-road, N.E. — Anæsthetist. Honorarium 25 guineas per annum.

NEW HOSPITAL FOR WOMEN, Euston-road, N.W.—House Physician, also Resident Medical Officer for the Maternity Department (females). Both for six months.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, E.—Two House Surgeons for six months. Salary at rate of £60 per annum, with board, residence, and laundry. Also Assistant Physician.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Surgeon. Salary £100, with board, lodging, and washing.

ROYAL EAR HOSPITAL.—House Surgeon, non-resident. Honorarium at rate of £40 per annum.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, West Strand, W.C.—House Surgeon for six months. Honorarium £25. Also Clinical Assistants for six months.

SOCIETY OF APOTHECARIES OF LONDON.—Examiner in Medicine.

TOTTENHAM HOSPITAL, London, N.—Casualty Officer for six months. Salary £40 per annum, with residence, board, and laundry.

WESTERN GENERAL DISPENSARY, Marylebone-road, N.W.—Honorary Physician.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician for six months. Board, lodging, and laundry provided.

WINSLEY, NEAR BATH, SANATORIUM FOR POORER CONSUMPTIVES.—Resident Medical Officer, unmarried. Salary £200, rising to £300.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Ongar, in the county of Essex.

Births, Marriages, and Deaths.

BIRTHS.

BIRD.—On May 13th, at Old Hayes, Sidmouth, the wife of Arthur C. Bird, M.R.C.S., L.R.C.P. Lond., of a daughter.

DRU DRURY.—On April 11th, at Grahamstown, Cape Colony, the wife of Edward Guy Dru Drury, M.D., B.S. Lond., of a daughter.

HETT.—On May 12th, at Craven-hill, W., Muriel, the wife of Geoffrey Seccombe Hett, M.B., of a daughter.

HILL.—On May 13th, at Merton-road, Wimbledon, S.W., the wife of E. A. Lowder Hill, M.R.C.S., L.R.C.P., of a daughter.

PALING.—On May 11th, at 178, Horninglow-street, Burton-on-Trent, the wife of Albert Paling, M.B., B.S., F.R.C.S., of a daughter.

THORNTON.—On May 13th, at 3, The Beacon, Exmouth, the wife of George Lestock Thornton, M.A. Cantab., M.R.C.P. London, M.R.C.S., of a daughter.

UPWARD.—On May 13th, at Edfou, Romford, the wife of Harold Upward, M.B., M.R.C.S., of a son.

MARRIAGES.

STEVENS—HEAL.—On May 11th, at All Souls, Langham-place, C. H. Stevens, M.R.C.S., L.R.C.P., of Plympton, to Mary, elder daughter of Frank Heal, of Bedford-park, W., and the Inner Temple.

STRONG—HOLLAND.—On April 29th, at St. John's Church, Buluwayo, by the Right Rev. the Lord Bishop of Mashonaland, assisted by the Rev. J. Hallward, Edgar Hugh Strong, M.R.C.S. Eng., L.R.C.P. Lond., youngest son of Lieut.-Col. Owen H. Strong, of "Monard," Knole-road, Bournemouth, to Agnes Beryl, third daughter of W. A. H. Holland, Esq., J.P., of Grahamstown, Cape Colony. (By cable.)

DEATH.

LANGWILL.—At 4, Hermitage-place, Leith, on May 13th, Amy Holmes, wife of Hamilton Graham Langwill, M.D., F.R.C.P.E.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

MEDICAL EVIDENCE AT CORONERS' INQUESTS.

To the Editors of THE LANCET.

"Search to the core and with the sharpest knife
The secret of the soul's escape from life."—*Culpepper.*

SIRS,—Every lover of diagnosis and vital statistics must regret that a post-mortem examination was not ordered in this Stepney case (*vide* THE LANCET, May 6th, p. 1243), although the ordering of a necropsy is purely at the discretion of the coroner. No doubt Mr. Baxter had his reasons for not having one but every medical man of to-day is credited with the ability to make a post-mortem examination in an every-day case. Now some coroners, notably Mr. Troutbeck, do not think so, for they do their best to supersede the general practitioner in these duties and sometimes in giving clinical evidence; and why? Because they have sworn to obey the ninth tenet of the London County Council's "Rules *re* Appointment of Coroners," which see—in difficult cases, by employing a special pathologist and (tenet 8) in holding inquests with or without post-mortem examinations in certain other cases, a grave injustice to those in general work.

As things went on in this case (judging from the report in THE LANCET) the evidence was inadequate on the part of the mother and of the medical man. Of the mother, in that nothing was asked as to recent personal history of the boy, as to length of cough, malaise, appetite, chills, colic, headache, squint, or previous sickness; of the medical man as to temperature, history of cough, heat of skin, urine, dulness, crepitation, bronchial breathing, or other physical states; in fact, the use of the word "blow" (in the absence of evidence) seems to have lighted a bonfire which extinguished the course of further inquiry and to have led to an unprofessional theorem. Now, no lawyer-coroner is competent to discuss clinical phenomena let alone the rôle of pathological states, in my opinion, and as forensic *versus* clinical cases at inquests occur in the proportion of 15 to 100 the comparative eligibility of lawyers and medical men for the office of coroner goes without saying: surely pathology stands before logic and torts in the matter of sudden deaths.

No wonder, then, when law unfolds medicine that a verdict reads as a chimera—"a shot in the dark"—a travesty. With the symptoms of vomiting, abdominal pain, and irregular pupils, although it is not the duty of the medical witness to theorise, there was an opportunity of ventilating a differential diagnosis and this would have won over by assisting the coroner, whose respect we should always manfully court by preparing our evidence with the sharpness of two-edged swords and the fulness of current knowledge. Concerning the diagnosis, it might have been a case of: (1) neglected influenza culminating in meningitis; (2) the onset of acute fever (a lethal dose of scarlet fever or measles); (3) a trauma without signs; (4) a tuberculous meningitis; (5) obstruction of bowels, followed by perforation; (6) uræmia; and (7) croupous pneumonia, severe and sudden (but here there would still be many cardinal symptoms to spot even at the eleventh hour). More history, an examination of the urine, sputum, &c., would have greatly helped, but is it not likely that the boy had an empty stomach, was overwrought by lessons, play, and a latent disease, and then was stricken by a meningeal effusion paralysing the third nerve of the dilated pupil side, all of which was due to an unrecognised influenza? The play of the pupils to light was not mentioned. Mr. Kennard may congratulate himself that he was subpœnaed for clinical evidence as some of us do not get that. Lastly, I should like to mention that I always make it a point to have another professional friend to help me in any post-mortem examination.

I am, Sirs, yours faithfully,

May 15th, 1905. M.D., M.R.C.S.

LIVINGSTONE COLLEGE.

THE principal of Livingstone College at Leyton, E., has issued an illustrated pamphlet describing the work of the college which has now been established for nearly 12 years. May 23rd is commemoration day, when all who are interested in the college are invited to attend. As it is the only institution in the world specially devoted to the training of missionaries in the elements of medicine and surgery the pamphlets above alluded to make a very interesting souvenir. There can be no doubt of the good work which the college does for missionaries going to unhealthy climates or to isolated posts and the institution, therefore, ought to receive the financial aid of which it is greatly in need. At present there is an accumulated deficiency of over £600 and it would be most inexpedient to raise the fees. A friend of the college has offered £200 provided £1000 can be raised by commemoration day (May 23rd) and £550 of this sum is still required. We trust that the required sum of money may reach the treasurer, Mr. R. L. Barclay, 54, Lombard-street London, E.C., before the date mentioned.

PRESENCE OF MIND IN A SMALL CHILD

THE following instance of presence of mind in a small child, aged six years, was recently brought to our attention. The little girl's father while examining a gas leakage broke off the bracket and accidentally ignited the gas, with the result that a long flame shot up towards

the ceiling. No damage was done, as the gas was at once turned off at the meter, but shortly afterwards it was discovered that the little girl was missing from the house. Then a fire-engine arrived and it was found that unknown to anyone, and upon her own initiative, she had left the house and given the alarm at the fire station, a distance of several hundreds of yards away. To medical men this kind of readiness in small children to grasp a situation is important, because children, even mites of six years of age, are so often left in charge of infants. As it happened there was someone in the house to turn off the gas at the meter and possibly to punish the child for officiousness, but in other circumstances such promptitude might have saved life and property.

COMPULSORY SCHOOL ATTENDANCE AND PUBLIC HEALTH.

To the Editors of THE LANCET.

SIRS,—I had so many complaints in Shropshire that the Education Act, as it was administered, was unnecessarily harsh and unfair to the working classes, because it was assumed that if a child was too ill to attend school its parents must pay about 2s. 6d. for a doctor's certificate or be summoned and fined that I did my best to find out what the law really was. I also gave two cases in all the local papers which had come to my knowledge where the poverty of the parents had practically compelled them to send a sick child to school and in each case had resulted in the death of the child, but the cases would take up too much of your valuable space. It appears that it is not correct to suppose that a parent is obliged to get a doctor's certificate when a child is not well enough to go to school. It rests entirely with the school attendance committee to decide on the merits of each case whether it will send a particular case to be prosecuted before a magistrate or not. The school attendance committees cannot, of course, grant a legal exemption but they can do what comes to exactly the same thing. They can refrain, when they think the circumstances justify it, from prosecuting parents for the non-attendance of a child, and it is their business to find out whether any case is genuine or not. The school attendance committees have discretion left to them in these matters and ought to use their discretion, because matters of this kind cannot be dealt with by a hard-and-fast law. Otherwise we might as well be under the iron heel of a Government department attempting to administer minute local matters from Whitehall. It would surely be extremely unjust if working people were obliged to pay for a doctor's certificate every time a child had a bad cold on his chest or some other ailment for which he might be reasonably and rightly kept from school. The fact appears to be that school attendance officers find it easier to make a hard-and-fast rule, as it saves them trouble. County councils have power to make a by-law to the effect that children between the ages of five and seven years of age need not be compelled to attend school if the nearest school is more than a mile from their home.

I am, Sirs, yours faithfully,

Shrewsbury, May 13th, 1905. ROWLAND HUNT.

ANOTHER PROPOSED CANCER REMEDY.

THE following letter was recently received by the house surgeon mentioned below. It will be seen that the plant, according to the writer of the letter, has a wide range of usefulness. We have not seen the plant but we should think that probably it belonged to the spurge family, the plants of which all contain acrid juices and if applied in the manner directed would cause ulceration; but eating the leaves of spurge would most likely be dangerous.

To the House Surgeon Brompton Hospital.

SIR,—Enclosed you will find a wild plant. It is a cure for anything (such as a sore). Would you mind trying it for a cancer, or anything of that kind. I have other plants, which I will send when I can get them to grow. Trusting you do not mind giving this a trail. Yours truly,

Komgha, April 9th, 1905. ISABELLA REANEY.

Address, Mrs. I. Reaney, Komgha, Cape Colony, South Africa.

"Take the leaf and dip it in cocoanut oil to make it soft, and put it on the sore or cancer all day. At night put a little coarse meal, made soft by adding water. The next day put a leaf on again every day for three weeks. The leaf should draw the sore, and which causes terrible pain, until the cancer falls out, leaving a large hole, which is healed up by ointment. You can eat the leaves, which will do you a great deal of good, or you can put them in water and drink it. I don't think it is poisonous. The stems you boil them and drink. It will clear your blood from any disease."

VASENOL: A NEW FORM OF ADMINISTERING PETROLEUM.

THE difficulty that is met with in emulsifying vaseline and liquid paraffin has led to the addition of fatty acids, soaps, and other bodies but these have possessed therapeutic objections. According to the *Apotheker Zeitung* A. Kopp has overcome these difficulties by adding to the paraffin a small quantity of the higher fatty alcohols obtained from wool fat, spermaceti, or other sources. The term vasenol has been given to the various preparations of paraffin when treated in this way; they have interesting pharmaceutical and therapeutic properties. They mix readily with aqueous liquids, producing emulsions which are quite neutral, and when applied locally in this form medicaments are stated to be absorbed in a higher degree than when mixed with soft paraffin alone. Vasenol, an emulsion of soft paraffin with 25 per cent. of water, has the consistence of an ointment; it can absorb several times its weight of water and can be mixed with a great number of fats, salts, powders, extracts, and liquids. Liquid paraffin mixed by this method with 33 per cent. of water forms a neutral oil possessing similar properties; thus, it may be used for liniments, or it may be mixed with water in any proportions and used as an injection. It is useful also for soaking tampons in gynæcological practice. Vasenol may be produced in the form of a powder containing 10 per cent. of vasenol. This preparation combines the properties of an absorbent powder with those of vaseline and maintains the skin in a state of suppleness. It may be used with advantage in dressing wounds, as various astringent and antiseptic substances may be added.

A LARGE INFANT.

To the Editors of THE LANCET.

SIRS,—A few months ago you published notes, sent to you by Mr. R. E. W. Jennings, of a large infant weighing 13 pounds. I beg to inform you that I delivered a Dutch lady of a son weighing exactly 14¼ pounds. The child to me looked as if he would be more satisfied with a chop than a drink of milk from the breast. I also attended the same lady at a previous confinement when she gave birth to a son weighing 14½ pounds. Both confinements were perfectly natural and quick, forceps not being necessary in either case. I may mention that both mother and father are large persons.

I am, Sirs, yours faithfully,

WM. P. JOHNSTONE, M.B., C.M. Edin., J.P.

Maraisburg, near Johannesburg, April 20th, 1905.

Disgusted.—If our correspondent can prove his statement that his patients have been approached by touts pressing them to join the "family club" the matter is one which should be laid before the General Medical Council. The Council would, of course, require the strictest proof before acting, but if it was satisfied that such an abuse of practice had occurred it would probably take severe measures.

Old-fashioned has not understood our answer, nor is he aware of the details of the case. Medical men can never be too strict or too altruistic in their professional relations towards each other but we are unable to support the view that a medical man has a property in his patient and that the patient cannot change his medical adviser if he wishes.

G. W. (Birmingham).—The police are compelled to make inquiries in what might be a case of murder the moment the circumstances come to their attention, so that the midnight call seems to us justifiable. Our correspondent might consult a solicitor as to the possibility of recovering a fee; we do not see why he should be disturbed for nothing.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (23rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.).

WEDNESDAY (24th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.) Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.).

THURSDAY (25th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.).

FRIDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Royal Ear (10 A.M.).

SATURDAY (27th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (22nd).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover square, W.).—Centenary Day. 5 P.M. Reception by the President. 5.15 P.M. The President: Congratulatory Address. 7.45 for 8 P.M. Centenary Banquet at the Hotel Cecil.

TUESDAY (23rd).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY, (20, Hanover-square, W.).—8.30 P.M. Special Address:—Dr. H. Head: The Afferent Nerves under a New Aspect. The conclusions expressed are drawn from investigations carried out in conjunction with Dr. W. H. R. Rivers (Cambridge) and Mr. J. Sherren. (Illustrated by means of the Epidiascope.)

WEDNESDAY (24th).—BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY (20, Hanover-square, W.).—5 P.M. General and Ordinary Meetings.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY (Natural History Museum, Cromwell-road).—Conversazione. 9.30 P.M. Reception by the President and Lady Powell.

FRIDAY (26th).—CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Annual Meeting for the Election of Officers and Council for the Session, 1905-06. Papers:—The President (Dr. F. Taylor) and Dr. Fawcett: A Case of Milky Ascites in which the Opalescence was not due to Fat.—Mr. J. Berry: A Rhinoplastic Operation.—Dr. S. Phillips and Mr. B. H. Spilsbury: A Case of Primary Adrenal Carcinoma of the Liver (specimen and microscopic sections).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (22nd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies street, W.C.).—4 P.M. Dr. T. C. Fox: Clinique. (Skin.) 5.15 P.M. Dr. W. Ll. Andriezen: The Classification of Insanity.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Davis: Gastritis, Causes and Treatment.

TUESDAY (23rd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. W. Carr: Clinique. (Medical.) 5.15 P.M. Dr. T. Oliver: Angina Pectoris and Allied Conditions.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Paget: Surgical Cases.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Dr. R. Russell: Cranial Nerve Paralyses.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Lecture-Demonstration:—Dr. G. P. Chappel: Infantile Diarrhœa.

WEDNESDAY (24th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Clarke: Clinique. (Surgical.) 5.15 P.M. Dr. C. T. Williams: Pulmonary Congestion.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Beddard: Practical Medicine.

ASSOCIATION OF MEDICAL DIPLOMATES OF SCOTLAND (11, Chandos-street, Cavendish-square, W.).—8 P.M. Council Meeting. 8.30 P.M. General Meeting. Clinical Cases illustrating All Phases of Rheumatism. Discussion and Petition to the Royal College of Surgeons, Edinburgh, to alter the title of L.R.C.S. Ed. to M.R.C.S. Ed.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Lecture:—Dr. Maguire: The Elements of Prognosis in Pulmonary Tuberculosis (with illustrative cases).

THURSDAY (25th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique: (Surgical.) 5.15 P.M. Dr. R. Hutchison: The Dietetic Treatment of Diabetes.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Baldwin: Practical Surgery.

HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Lecture:—Mr. Collier: The Surgical Treatment of Empyema.

CHARING CROSS HOSPITAL.—4 P.M. Mr. Waterhouse: Demonstration of Surgical Cases. (Post-Graduate Course.)

SAMARITAN FREE HOSPITAL FOR WOMEN (Marylebone-road, N.W.).—3 P.M. Lecture:—Dr. McCann: The Diagnosis of Uterine Cancer.

FRIDAY (26th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. D. Grant: Clinique. (Ear.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.). 5 P.M. Mr. C. Williams: X Rays, Diagnosis and Treatment.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Dr. Ferrier: Paraplegia.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Lecture-Demonstration:—Mr. R. P. Brooks: Some New Ophthalmic Remedies.

ROYAL INSTITUTION OF GREAT BRITAIN (Albemarle-street, W.).—9 P.M. Prof. J. W. Brühl: The Development of Spectro-Chemistry.

EDITORIAL NOTICES.

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It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, May 18th, 1905.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb	Remarks at 8.30 A.M.
May 12	30·26	N.E.	...	120	62	48	47	55	Fine
,, 13	30·34	N.E.	...	104	59	47	47	52	Overcast
,, 14	30·31	N.	...	65	57	47	48	52	Overcast
,, 15	30·33	N.E.	...	120	63	44	47	54	Fine
,, 16	30·27	N.E.	...	114	61	43	49	54	Fine
,, 17	30·19	N.E.	0·05	127	72	49	53	58	Fine
,, 18	30·13	N.E.	...	126	68	47	51	57	Fine

During the week marked copies of the following newspapers have been received:—*Westminster Gazette, Yorkshire Mercury, Daily Chronicle, Irish Times, Surrey Advertiser, Reading Mercury, Literary Digest (New York), Scientific American, Daily News, Australasian Medical Gazette, Western Mail (Cardiff), Herefordshire Mercury, Windsor and Eton Express, Halifax Courier, &c.*

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Q.—Queensland Public Health Department, Brisbane, Secretary of; Queensland Government Statistician.

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